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Anatomical Studies.

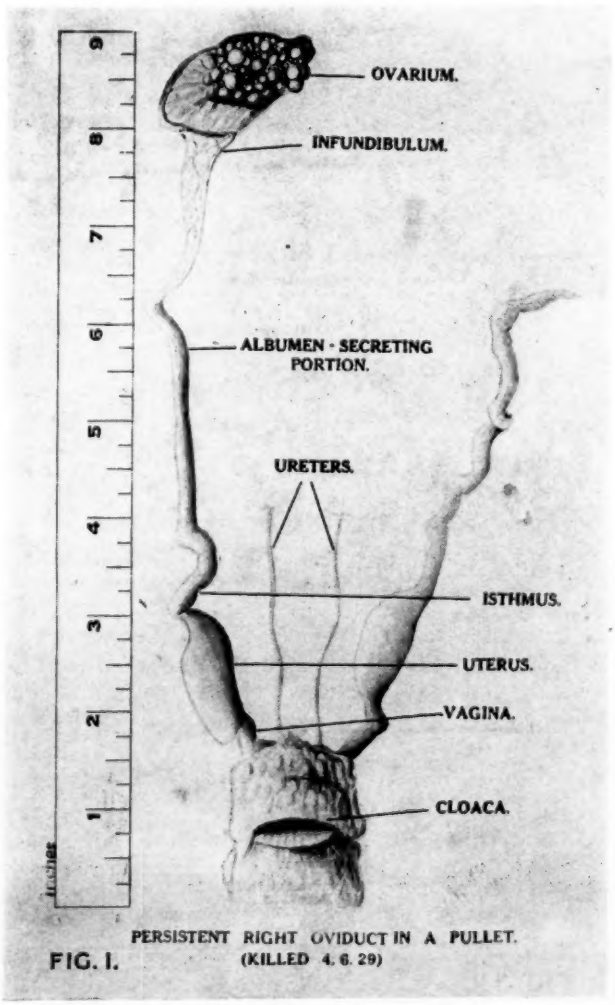
No. 13: Persistent Right Oviduct in a Pullet.

By Dr. H. H. CURSON, Veterinary Research Laboratories, Pretoria.

Although Bradley (1915) states that the right oviduct " is often represented by a rudimentary tube opening into the cloaca," yet it is seldom one so large as that shown in Fig. 1 is encountered.

Kaupp's (1918) view is that the rudimentary right oviduct is only " occasionally " present.

On making a *post-mortem* examination (4/6/29) on a year-old white Wyandotte pullet, affected with *Neurolymphomatosis gallinarum*, Dr. A. D. Thomas observed the unusual nature of the genital tract and handed the material to me. For this act of courtesy I desire to express my thanks.



PERSISTENT RIGHT OVIDUCT IN A PULLET. (KILLED 4. 6. 29)

FIG. 1.

As indicated very clearly in the formalin-preserved specimen (see Fig. 1), the total length of the left oviduct was nine inches, whereas the right vestigial duct was six inches. In the latter may be recognised the vagina, uterus, isthmus and albumen-secreting regions. There was no ovary on the right side. Although the left uterus was better developed, being 1·25-ins. in length to the 1-inch of that of the opposite side, yet the right vagina was longer, being 1·5-ins., compared with 1-in. of the left vagina. In *neither* oviduct was there an open passage between the vagina and cloaca.

With regard to the embryology of the oviducts, Lillie (1919) states, " development of the right Müllerian duct ceases after the eighth day, and it soon begins to degenerate. Its lumen disappears and it becomes relatively shorter, so that its anterior end appears to slip back along the Wolffian body. On the fifteenth day slight traces remain along its former course, and a small cavity in the region of the cloaca. It never obtains an opening into the cloaca." The left Müllerian duct, however, continues development, and differentiation of the several portions of the oviduct is apparent about the twelfth day. There is generally no communication between the uterus and cloaca until after the fifth month.

REFERENCES.

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KAUPP, B. F. (1918). "The Anatomy of the Fowl" p. 325. W. B. Saunders Co., Philadelphia and London.

LILLIE, F. R. (1919). " The Development of the Chick." p. 402. H. Holt & Co., New York.

No. 14: Abdominal Cysts in Hens.

BY DRS. H. H. CURSON and G. MARTINAGLIA, Veterinary Research Laboratories, Pretoria.

INTRODUCTION.

Hens, particularly those of the heavy laying strains, are frequently received at this Institution with a clinical picture of ascites. On examination, the condition is generally found to be cystic in origin, although in advanced cases the cystic nature is not always obvious. Clinically the abdominal wall may be pendulous, almost touching the ground in rare cases, the result being that the sufferer assumes a penguin-like attitude. Accompanying this symptom may be atrophy of the internal organs and frequently a cyanotic appearance of the comb. The contents of a cyst (fluid sometimes over 500 c.cm. in amount), are generally clear and watery, but occasionally a white flaky material or grey granular sediment is present. Bacteriological examination is usually sterile, but on occasions coli-like organisms have been isolated. (See Fig. 5.)

DEPT. OF VET. MEDICINE

In a preliminary investigation into the cause and nature of abdominal cysts, we have recently encountered the following cases :—

(*a*) *Leghorn hen* (9589).—Approximately 6 cm. from the cloacal orifice of the right ureter, the tube was cystic (see A, Fig. 1), the diameter thereof being 0·5 cm. Cranial to this, at a distance of 1·5 cm., appeared a second cyst (see B, Fig. 1), this being somewhat pyriform and having a length of 3 cm. There was no communication between A and B, for the intermediate portion of the ureter had become fibrous. Associated with the infundibulum of the left oviduct was a further cyst, irregular in shape, but containing a transparent fluid as in the two cysts just described.

(*b*) *Leghorn hen* (9722).—In this bird all that could be seen of the right ureter was an elongated cyst attached to the dorsal wall of the cloaca as represented in Fig. 2. The contents were clear and watery and entirely enclosed by the much attenuated ureteric wall.

Unfortunately from both these hens only the oviduct and cloaca were received for examination. In neither case was the vestige of the right oviduct discernible. Joest (1924) refers to a case of "Rechtsseitige Uretero-Pyelo-nephritis" described by Magnusson in a hen that had been sick for eight days. It is stated that the contents of the ureter showed organisms of the *B. coli* group, but no reference is made at all to abdominal cysts.

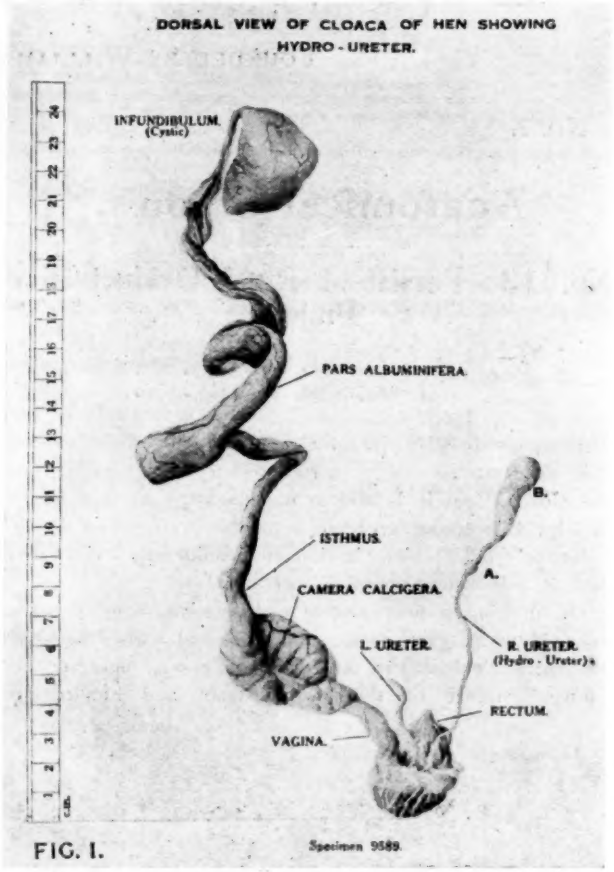

FIG. 1.

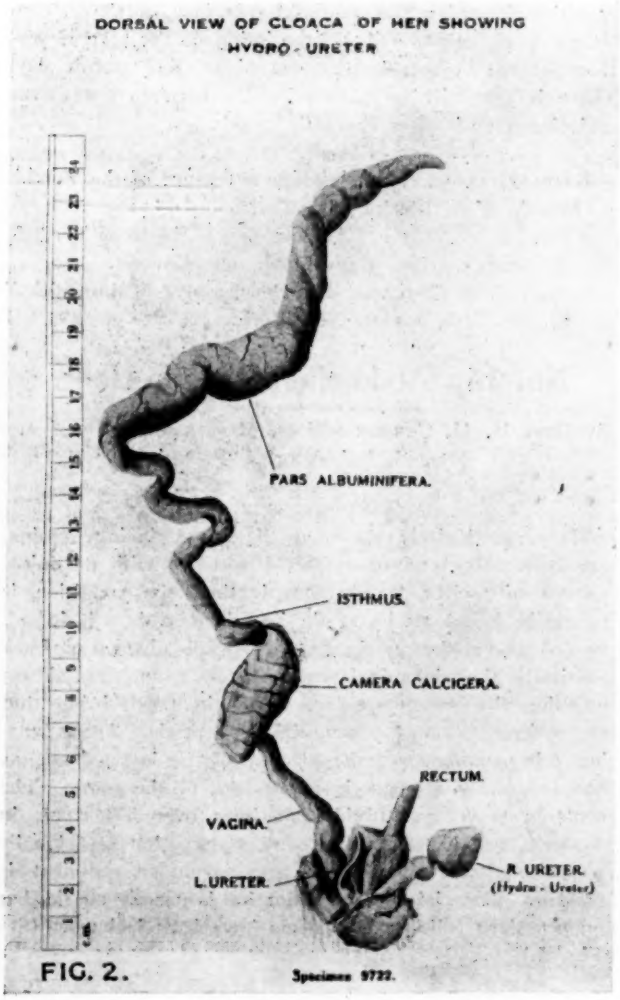

FIG. 2.

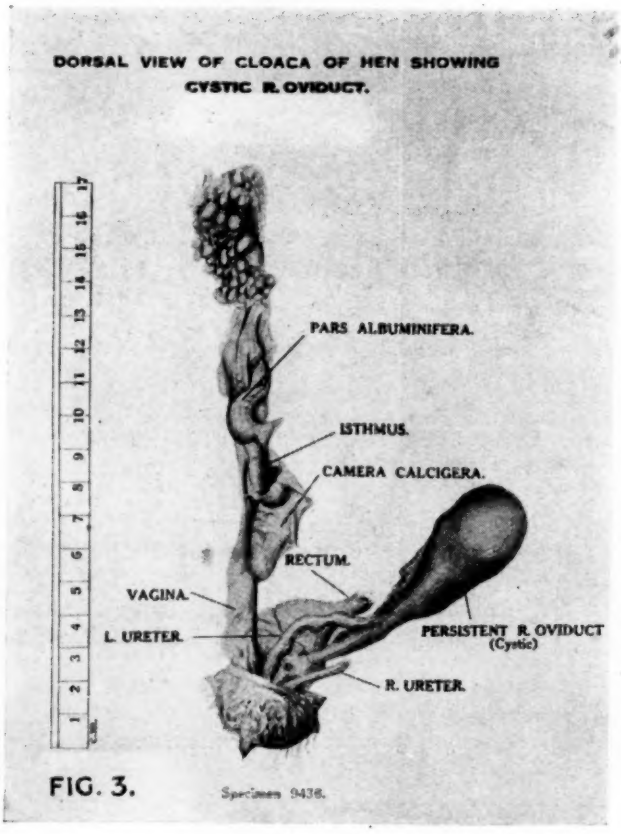

FIG. 3.

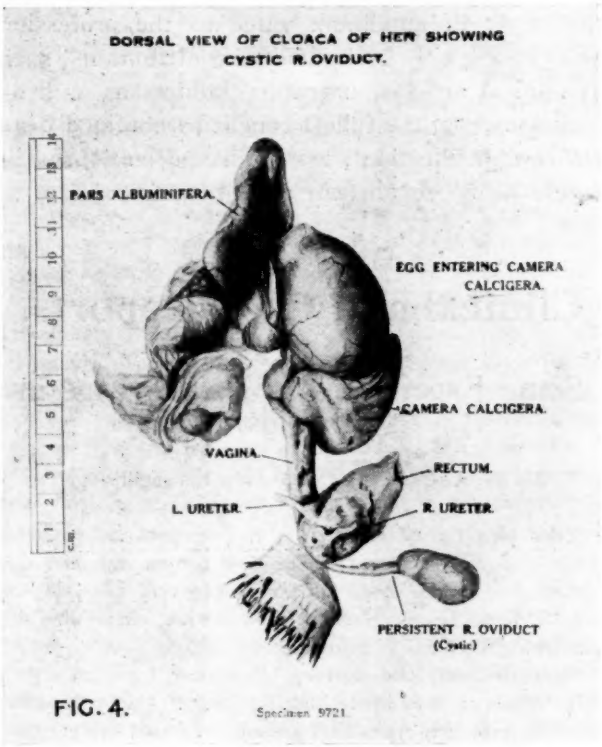

FIG. 4.

FIG. 5

(*c*) *Leghorn hen* (9436).—Here the right ureter was perfectly normal, but extending from the right antero-lateral aspect of the cloaca, 1·5 cm. from the right ureteral orifice, was a cystic structure 7·5 cm. in length, with a maximum cranial diameter of 2·5 cm. and tapering gradually to the cloacal attachment. (See Fig. 3.)

(*d*) *Black hen* (9721).—Again the cyst originated from the right antero-lateral aspect of the cloaca, but instead of being cranial to the right ureter, the pyriform sac, of a length of 4 cm., arose on a level with the ureter, at a distance of 1 cm. laterally. Details are shown in Fig. 4.

In both the above cases the urinary system appeared normal, but particular attention is now being paid to (*a*) kidneys, (*b*) contents of cysts (both ureteral and other) and (*c*) percentage of hens showing rudimentary right oviducts.

Of the 5 cysts described above (two in the first case 9589) one was associated with the infundibulum of the left oviduct and two each with the right ureter and apparently right vestigal oviduct. It is obvious, therefore, that abdominal cysts differ greatly in their situation and origin.

Reference.

Joest, E. (1924). Spezielle pathologische Anatomie der Haustiere III. Richard Scholtz, Berlin. p. 373.

The Lords and Parrot Disease.

In the House of Lords on Thursday of last week, the Earl of Onslow asked the Government how many cases of psittacosis or " parrot disease " had been recorded since June 1st, 1929; what steps had been taken to prevent the spread of the disease, and whether there were any restrictions imposed on the importation of parrots, and, if so, of what nature.

Lord Dawson of Penn said it was important to preserve perspective on this matter. The disease might spread in patches, but there was no fear of its spreading in a universal way like influenza. But there was liability when the disease did break out for it to have dire results. It seemed to him that there were two courses open for consideration. The Ministry of Health knew the difficulties of each of them. One course was to put parrots into quarantine. The alternative was an embargo. They had put an embargo on diseased meat and animals which were likely to be diseased when they were killed. He suggested for the consideration of the Government whether, seeing that a parrot was only a luxury, it would not be better to place an embargo on the importation of the parrots for a reasonable time until the disease had passed.

Lord Marley, replying for the Government, said the disease was not compulsorily notifiable, and as a result there were no complete records of it. Since June 1st the Ministry of Health had received information of 40 cases in this country, in some of which the available particulars established only a suspicion of the disease. The Ministry were advised that the danger of the spread of the disease from a human case was practically negligible. If there were no parrots in a house the people who were in that house would appear to be safe. To deal with the spread of the disease, therefore, they had to rely on precautions adopted with regard to the parrot itself. The Ministry realised that the matter might become serious and had, therefore, prepared a memorandum setting forth such information as was available with regard to the disease and the precautions which should be observed in the care and handling of parrots. The memorandum would be circulated shortly to local authorities and would be on sale. There were at present no restrictions as to the importation of parrots. Under the existing law he was advised that restrictions could only be imposed if it were established that measures of this kind were necessary in order to prevent the spread of the disease. The Ministry of Health felt that further information was necessary before they would be justified on grounds of health in imposing restrictions on importation. They were further informed that practically no commercial consignments of parrots had reached the country during the winter months.

The Veterinary Record.
25th January, 1930.

A Northern President's Lead.

Mr. W. J. Rice, the President of the North of Scotland Division of the Association, speaking in his address from the chair at Aberdeen on the occasion of a meeting the report of which is published elsewhere in this issue, has done the N.V.M.A., its Divisions, and its official journal a service which we desire to acknowledge with gratitude and to turn to the best possible account by reproducing certain of his words in this column, thereby giving them the prominence they merit.

We gladly recognise that few, if any, members of the parent association, when elected to the post of honour of a local society, allow the opportunity to pass without placing before their fellow members the claims of the "National" and its journal upon their active interest and support, but we venture to say that none has done so more effectually than our enthusiastic colleague in the far north. Accordingly, we quote below from Mr. Rice's address, without further comment, deeming that his words point their moral in a way upon which we could not hope to improve.

"One can never estimate the value of membership of a Division of the N.V.M.A. . . . . We may spend time and money getting to meetings and bring back nothing tangible, but we bring back something immeasurable, something to which we add at each successive meeting that we attend—goodwill between our members, admiration for the other fellow's views, his handling of a case, his gift of diagnosis, a belief that he appreciates our effort and our difficulty, overlooks our error and applauds our success—something which, *in toto*, makes us better practitioners, better officers and better friends.

"We must keep up-to-date, and there is no easier way than by being a member of the nearest Division, by subscribing to the parent Association, the N.V.M.A., and supporting its official journal. The best medium for the exchange of views is, without doubt, our official journal, "*The Veterinary Record.*" As a Division our reports and discussions are submitted to it for publication, but that alone is not enough to make the paper of maximum value to the profession as a whole; only by individual contributions, such as clinical articles, narrating failures as well as successes, can the fullest benefit be obtained from our own publication . . . . What a live journal it would be if we all sent an article from time to time!"

Clinical and Case Reports.

Some Experiences of Hæmorrhage in Animals.

By W. A. Campbell, M.R.C.V.S., Boroughbridge.

Your plea for clinical matter has tempted me to relate some of my experiences of hæmorrhage in animals. As one or two of the cases have not been very creditable to me, I hope to glean some information, in return for publishing them, for future use.

Case I.—Early one morning in October I got an urgent call to see a well-bred hunting mare, six years old, bleeding profusely from both nostrils. I found her staggering round her box, blowing heavily and likely to drop. I gave her a large dose of adrenalin in saline solution hypodermically, and was glad to get out of the box again and the door shut. She never actually fell, but swung round the box, leaning on the walls. The flow of blood was getting gradually less, and at the end of half-an-hour was only a slight trickle from the right nostril. She calmed down, and on examining her properly I found her lungs quite clear and that the ruptured vessel was in the right nostril. A few days after she was, to all appearances, making a good and rapid recovery, but in such cases, remembering always the danger of the clot separating at the ninth day, I always insist on perfect quiet for a fortnight.

About the sixteenth day the head groom asked me to let him lead her out a bit as she was so full of nonsense in her box. They started to ride her and were thinking about showing her hounds again, when one morning, just nineteen days after her first attack, they found her bleeding as heavily as before. On my arrival I found all the grooms outside the door watching over the top. They told me she had stopped bleeding, but what was actually happening was that she was standing blowing and sweating, whinneying all the time, with her nose straight up in the air, and she was drinking the blood as fast as it came. Within a few minutes she fell dead. The *post-mortem* showed the lungs quite clean and clear of blood. The right nostril had some clotted blood, but showed little else. The stomach was full of clotted blood. Had I not followed the case from the beginning, and had I been called as an outsider to make a *post-mortem*, I should have said that the stomach was the seat of the trouble and should never have suspected the right nostril.

Case II.—I was called one night to a three-year-old cart colt, found staggering about the field. When I arrived they had just got him under cover when he dropped

and could not rise. From his blanched membranes, want of temperature, etc., I diagnosed internal hæmorrhage.

I gave him adenalin, etc., with orders to repeat in four hours' time. The following morning he was up eating and looking well. Orders were given to keep him quiet for a fortnight. About four days after he broke down his yard door and galloped across a field to his mates. Within an hour he was found dead, and the horse slaughterer to whom he went reported that he had had a bucketful of loose clotted blood in his abdomen.

Case III.—A thoroughbred two-year-old entire colt, running in a paddock by day and in a box at night, was found bleeding heavily from both nostrils one night in his box. When I saw him this had stopped. He was blowing but was not greatly distressed; he quickly recovered and was soon as full of mischief as ever. Ten days after I was called again to him. I found that the groom in charge was holding his head up to the rack, as he said that he had always been told that to pull the nose up was the quickest way to stop bleeding from the nostril. However, in this case the hæmorrhage was from the lung, and he was drowning the colt; a few more minutes and the animal would have been dead. Immediately the head was dropped there was a great rush of blood from both nostrils, and the colt gradually regained his breath. He is now recovering and appears about normal, but as that occurred only a week ago, I should not value him at much to-day. I find, in calving cows, that the ninth day is a very likely time to have a recurrence of hæmorrhage; in horses it would appear to happen at any time and without apparent cause.

Case IV.—A few years ago, I was called to a cart horse, in regular work, found that morning pushing with his head against the wall. I found him firmly planted, pushing hard at the wall in front of his stall. As those cases are often bad to handle, I left him pushing, gave him a hypodermic injection, and ordered cold water to be applied constantly to the poll. Thinking the pressure on the brain was probably due to a blow on the head or something of that sort. I consulted my assistant about bleeding him. Later on in the day we bled him from the jugular. That same night the owner reported him much better. He had stopped pushing and was eating some hay and mash. The following morning he was found dead in the stall. The horse slaughterer was told to notice and report on what he found. He reported that he found a bucketful of loose blood in the abdomen and that the flesh was bled white. Certainly that animal showed no signs of anæmia of the brain the day before he died. The membranes were infected and the eye dull; in fact, he had all the symptoms of congestion of the brain.

Army Veterinary Service.

Movements of Officers.

Majors R. W. Mellard, D.S.O., C. S. Northcott, and G. F. Watkins, sailed for India on the 21st January, 1930, for a full tour of duty abroad.

Major C. K. Calder arrived home from Egypt on the 21st January, 1930, and is now doing duty in the Northern Command.

A Note on the Susceptibility of Cattle to Carbon Tetrachloride.

By T. Wilson, M.R.C.V.S. and F. Blakemore, M.R.C.V.S., D.V.S.M. (Vict.), Nantwich, Ches.

The treatment of liver fluke in older cattle is not often called for, but from many *post-mortem* examinations made we have found distomatosis to be a frequent cause of unthriftiness in Irish cattle, especially during their first winter of life in this country. We therefore decided to test the value of carbon tetrachloride in such cases. Fully aware of the uncertainty of the drug's action, the dose given was unusually small *i.e.*, 5 c.cs., the intention being to give an increased dose at a later date, if tolerated. The drug was administered in soft gelatine capsules and was supplied by a reliable firm of manufacturing chemists; moreover, the same capsules have been used repeatedly for the treatment of liver fluke in sheep without ill effect.

The three cases given below illustrate the extraordinary susceptibility of some bovines to carbon tetrachloride, which was administered to all three animals without fasting.

(1). A three-year-old Irish dairy cow in poor condition and suspected to be suffering from liver fluke disease. On the morning of the 26th December, 1929, 5 c.cs. of carbon tetrachloride was administered. The same evening the animal was sleepy and disinclined to eat. The following day it was still dull, did not feed, and remained lying. On the morning of the 28th December the condition was much worse and the animal was slaughtered *in extremis*.

Post-mortem examination revealed numerous flukes in the bile ducts.

(2). A three-year-old Irish dairy cow in fair condition but unthrifty and suspected to be harbouring flukes. The animal received 5 c.cs. of carbon tetrachloride on the morning of the 9th January, 1930. The same evening it was noticed to be dull and off its food. Next morning the condition was much the same, but in the afternoon rigors were noticed and the animal preferred to remain recumbent. On the 11th January the cow was much worse, if made to move the gait was very unsteady. Rigors and excessive salivation were present. The animal died quietly about 11 a.m. (72 hours after dosage.)

A *post-mortem* examination was made the same day. The liver was found to be enlarged and the bile ducts much thickened. Only a few flukes were present, but the condition of the liver indicated a recent heavy infestation. The only other macroscopic lesions were extensive ecchymoses in the epicardium.

(3). The last case, a three-year-old Irish dairy cow, in similar condition, showed marked improvement following treatment. The animal received 5 c.cs. of carbon tetrachloride on the morning of the 9th January, 1930: the same evening it was dull, did not eat, and gave a reduced amount of milk. The condition improved the following day and on the 11th January the animal was in normal health.

The faeces in all three cases were normal throughout. It may also be mentioned that the cattle had passed the double intradermal tuberculin test about six weeks previous to dosage. Other animals fed and housed under the same conditions remained in normal health.

Conclusion.—American workers[1] suggest that the

toxicity of the carbon tetrachloride for milking cattle may be due to an inadequate supply of calcium in their blood and recommend that animals should be placed on a diet rich in assimilable calcium for a week previous to dosage. The diet fed to the three cases under consideration was not deficient in calcium and consisted of hay, ensilage, and concentrates.

Experiments carried out by Norris[2] show that 60 c.cs. of carbon tetrachloride given in three daily doses within a period of four days, is well tolerated by a young bovine weighing 450 lb., but a single dose of a 100 c.cs. may set up toxic symptoms and be fatal for yearling cattle weighing 500 lb. Jones and Montgomerie[3] in experiments on cattle 6-12 months old, employed doses varying from 5-10 c.cs. and do not record any fatal toxic cases.

Considering the above data and the fact that the average weight of the cattle treated by us was about 900 lb., it appears that the drug is too uncertain in its action to merit its use in cattle practice.

References.

(1). M. C. Hall, *North Amer. Vet.*, Vol. VIII., No. 11.
(2). Norris " Control of Liver Fluke Disease in Sheep and Cattle," N.V.M.A. Ann. Congress, Dublin, 1926.
(3). Jones and Montgomerie, *Vet. Record*, Vol. viii, No. 14, p. 271.

Pasteurellosis in Calves.

By E. G. Robertson, M.R.C.V.S., Strathaven.

The subject of this report was a calf, aged two months and in poor condition, which had developed symptoms of pneumonia with painful cough, nasal discharge, rigors, and diarrhœa. It was wont to assume a rigid position, and evinced pain on the slightest movement. When approached, it gave way to violent tremors without collapse, which tremors were, in my opinion, the result of extreme fear of being forced to move. After a course of eight days, death supervened, when the heart and lungs were removed for further examination.

Microscopical examination disclosed a pleuro-pneumonia with innumerable dry, caseous areas, regular in outline, scattered throughout the substance of the lung.' The anterior portions of the two lobes were adherent, forming a large mass, which, on section, was found to consist largely of caseous material. The pericardium showed a considerable degree of thickening, and the pericardial cavity contained a quantity of serous fluid.

Specimens were sent to the Department of Pathology, the Veterinary College, Glasgow, from which a report was received that bipolar organisms were located in smears from the affected areas, and that sections revealed a fibrinous pleuro-pneumonia. The condition was, in fact, Pasteurellosis.

It is further noteworthy that, almost a year previously, two calves, each four weeks old, died on the same farm after an illness characterised by similar semiology and anamnesis. The heart and lungs showed identical appearances, and laboratory examination revealed again bipolar organisms.

Review.

[Veterinary Research Report No. 5 (1927-28). Department of Agriculture, New South Wales. H. R. Seddon, D.V.SC., Director of Veterinary Research.]

The fourth Veterinary Research Report, which was reviewed recently in this Journal (*V.R.*, Vol. IX, No. 45, p. 996), is closely followed by the Report for 1927-28.

In addition to papers dealing with the personal researches of the Director and his staff, it contains reports of several investigations which were undertaken in collaboration with certain workers of the Commonwealth Council for Scientific and Industrial Research. Seddon remarks that, as a result of the continued existence of swine fever, it has been necessary to test a large amount of material from suspected outbreaks, thereby imposing additional labours upon the research officers and retarding to some extent the progress in other directions. It is proposed to embody the results of the work on this disease in a special report, but it is of interest to note that the experiments confirm the suspicion that birds may play the part of mechanical vectors of the disease and that the virus may remain fully virulent in fresh pork at ordinary temperatures for a period of at least 79 days.

Continuing his investigations into a form of mycotic dermatitis closely resembling favus which affects the sheep, Seddon furnishes direct experimental evidence that the condition is infectious, although he failed to obtain cultures of the mycelia which are present in the scabs in abundance. In collaboration with Belschner, he gives a description of a disease which he terms " Infectious Labial Dermatitis of the Sheep." Owing to pressure of other work, the investigators were unable to demonstrate the presence of a filterable virus in the lesions with certainty, but they are of the opinion that in every other respect the disease is identical with infectious pustular dermatitis, a condition which is widespread throughout Europe, Africa and America, and is known to be caused by a virus.

Reference is made by Edgar to an investigation into eight outbreaks of blackleg in calves. The organisms which he isolated were submitted to a complete bacteriological examination including morphological, cultural and saccharrlytic properties : moreover, in view of the fact that anærobes other than *B. chauvoei* have been incriminated as the cause of certain outbreaks of blackleg in Europe, these strains were tested against the sera of *B. chauvoei, B. welchii, Vibrion septique* and *B. œdematiens*. In each case a typical strain of *B. chauvoei* was found. The same author also isolated the variant of *B. œdematiens* which appears to be the cause of black disease from the livers of a number of apparently healthy sheep from black disease areas, but failed to obtain it from sheep in areas free from the disease. He shares the opinion of Dodd and of Turner that the organism is able to provoke lesions only when the liver parenchyma has been destroyed as, for example, by immature flukes.

Extensive trials on the reliability of various drugs which have been advocated for the treatment of parasitic gastro-enteritis in sheep are reported upon by Seddon and Ross. Batches of infested sheep, after treatment with the drug under test, were slaughtered, and the number of residual

parasites was compared with the number in control untreated sheep. In general, their conclusions are in agreement with those of other workers, *viz.*, that a single therapeutic dose does not entirely remove the common species of stomach worms and that infestations with *H. contortus* respond to treatment more readily than the smaller Trichostrongyles. In contra-distinction to the findings of Veglia, the experiments with copper sulphate and sodium arsenite were distinctly disappointing. Tetrachlorethylene, carbon tetrachloride and copper sulphate, with or without mustard, on the other hand, gave a high percentage efficiency against *H. contortus*. The doses which are recommended are 1-5 c.c. of carbon tetrachloride, 2·5 to 5·0 c.c. of tetrachlorethylene, and 7¼ grs. each of copper sulphate and mustard. They are emphatically of the opinion that the last-mentioned method is the safest. The same drugs were also of value against Trichostrongyles, in particular Ostertagia, the tests being slightly in favour of carbon tetrachloride.

In conclusion, Seddon and his co-workers have continued their valuable investigations into the alleged toxicity of various plants. Their experiments show that *Euphorbia eremophila, Lantana camara, Portulaca oleracea* and " Lambs' Tails " can be regarded as inoffensive. *Euphorbia drummondii* (milk weed) was distinctly toxic to sheep probably through the production of hydrocyanic acid. *Acacia glaucescens* (Sally wattle) and *Hypericum perforatum* (St. John's wort) were also poisonous, the latter exerting its action through the elaboration of a toxic principle which produced a photo-sensitisation on exposure to sunlight.

R. E. G.

Abstracts.

[**Dermatomycosis of the Sheep due to Actinomyces Dermatonomus.** Bull, L. B., *Aust. Jnl. of Exp. Biol.*, 1929. Vol. VI. Pt. 4, p. 301.]

The author believes that the disease which he describes is probably identical with the condition observed by Seddon* termed by him " Mycotic Dermatitis." He states that the affected animals showed numerous areas of densely matted wool scattered over the back, the sides and the upper part of the neck, whilst in some cases small lesions were observed about the nose and lips. The masses of matted wool which were firmly adherent to the skin appeared to arise from the binding together of the wool fibres by an exudate: when removed, the underlying skin presented a raw appearance. Only young animals have been affected, the most severe lesions being observed in lambs of from seven to eight months of age. Under experimental conditions the disease could not be readily conveyed from affected to healthy sheep in spite of close contact for many months. The author succeeded in isolating a micro-organism which was present in the scabs, either as a branching mycelium or as a short bacillary form. Conidia were also seen and were particularly abundant in rapidly growing cultures. The organism was cultivated on peptone media under aerobic conditions at 37°C or 22°C. From a consideration of the morphological and cultural characteristics, the name actinomyces dermatonomus is suggested. A typical lesion was produced by the application of a culture of the organism to the skin of an experimental lamb. As a corollary to some trials on the germicidal action of various drugs, it is recommended that, as a preventive measure, young animals in areas where the disease is troublesome should be dipped in a 1·500 copper sulphate solution towards the end of the autumn.

R. E. G.

* Veterinary Research Report (1927-28) No. 5.

[**Blood Transfusion (Intravenous and Subcutaneous) in the Treatment of the Anæmias.** By J. Cuillé and E. Darraspin, *Rév. Gén. de Médécine Véter.* Sept., 1929.]

One of the most important steps forward in therapeutics achieved during the last ten years is the transfusion of blood for the treatment of acute anæmia following hæmorrhage, the chronic anæmias accompanying certain intoxications, infections and parasitic infestations.

Two methods are actually used, namely, injection into a vein, and injection into the subcutaneous connective tissue; each has its particular indication.

The paper commences by reviewing the work done by various workers in the past and discusses technique, the substitution of artificial serum (salines) for blood, and also the methods adopted for preventing coagulation when blood is not transposed directly from one animal to another.

One danger of transfusing blood lies in the effects of mixing two lots of blood that belong to different blood groups. One may cause hæmolysis of the R.B.C. of the other. This is less important in veterinary medicine than in human. It is said that this is more liable to occur in the ox than in horse or dog.

In chronic anæmias there is a reduction of blood cells, but the volume of circulating fluid is but little disturbed and the functional value of the blood is kept up by accelerated heart beat; in sudden severe hæmorrhages, on the other hand, there is a great loss of both cells and serum, so it is in this type that a transfusion of, *e.g.*, normal saline is of great use, whilst such would be less useful in a case of chronic anæmia.

The sero-proteins of the blood play an important part in maintaining the normal volume of blood by means of the osmotic pressure they exercise. Normal saline cannot replace them functionally; however, the addition of gum arabic to artificial serum does do this, as it, a colloid substance, possesses similar properties to serum protein. It may with advantage be added to artificial serum in the proportion of 3 grammes per 100 c.c's. of serum.

In chronic anæmias the writers give preference to subcutaneous transfusion of blood. They quote a number of other workers who have used it in cases of various febrile affections, joint ill in foals, eczema, tetanus, canine distemper, etc.

The authors have used it for some years for chronic anæmia dependant on infections and prolonged intoxications. Subcutaneous transfusion has the advantage of being free from danger and one need not fear the results of incompatibility of different blood groups when using this method, as the transfused blood only acts after the lysis of its cellular elements.

Blood is taken from the jugular or saphenous vein into a

20-50 c.c. syringe, citrated or not, and at once injected into the muscular or subcutaneous tissue. Serum is absorbed and the cells are soon phagocytosed by the W.B.C. of the host. The iron set free from these newly acquired R.B.C. is at once available as a general tonic; mineral iron administered requires a relatively much longer period before it is rendered useful.

The authors have noticed that the best results are obtained in the patient when one healthy animal is used several times as a donor. The small and repeated loss of blood acts as a stimulant to the general blood-producing organs. In the patient there normally appears within one hour after injection a reaction; locally there is some warmth and tenderness, and an attendant rise in temperature of ·5-1·5 degrees, acceleration of pulse and respiration, shivering of superficial muscles.

These signs give indication of a good prognosis, but their absence indicates that the animal is too ill to make the response and the prognosis is unfavourable.

For the dog, the usual dosage of blood given subcutaneously is 20-50 c.c's.; it is repeated every two or three days or even every day in severe cases.

Improvement begins from the first dose and continues steadily so that, at the end of 7-15 days, the patient looks well on the way to health.

Certain specific types of anæmia, for instance—Piroplasmosis, are very well affected by subcutaneous transfusion. Although there is a specific cure for the disease and the causal organisms can be destroyed, the anæmia which accompanies it shows no tendency towards rapid decline.

Blood transfusion has been found to produce a quick improvement when once the exciting cause has been removed.

This interesting paper is concluded by a bibliographic index which contains no less than 58 references, mostly taken from the French.

Although it appears that ordinary saline injections, preferably given intravenously, will often save a case of sudden hæmorrhage of traumatic origin, the transfusion of actual blood is said to be by far the best therapeutic substance to employ for the treatment of chronic anæmia from whatever cause, always provided that this actual cause is simultaneously combated.

J. T. E.

Veterinary College of Ireland Dance.

On the night of January 30th, in the Metropole Ballroom, Dublin, the members of the Royal Veterinary College of Ireland held a most enjoyable dance. Special prizes were given for spot dances, the ladies' prizes being presented by Messrs. Mitchell, and the gentlemen's by Mr. Sleit. The organising committee consisted of Mr. N. H. Lambert, the honorary secretary; Professor and Mrs. Craig, Professor and Mrs. O'Connor, Professor and Mrs. Kearney, Mrs. Grogan and Miss Spears, Mr. B. Adams, Mr. J. Campbell, Mr. M. Healy, Mr. G. Keating, Mr. J. Pilkington and Mr. P. A. Reeves. There was a large attendance.

R.C.V.S. Obituary.

Butters, E. L., 1 Greenheys Road, Prince's Park, Liverpool. Graduated, Liverpool, December 18th, 1911. Died February 8th, 1930. Age 42 years.

Divisional Reports.

North of Scotland Division, N.V.M.A.

President's Address at Aberdeen.

The half-yearly meeting of this Division was held in Marischal College, Aberdeen, on Saturday, January 18th, 1930.

Mr. J. Rice, President, was in the chair and there were also present the following members:

Messrs. W. Anderson, D. Clerk, D. Crabb, D. Cumming, R. E. Drennan, J. C. Grant, G. Howie, J. Lyon, W. Macpherson, H. McVean, J. C. Mitchell, W. J. B. Robson, J. B. Russell, and J. McAllan, Hon. Secretary. Visitor, Mr. J. Gordon Soutar (Newmachar).

The minutes of the last meeting were taken as read, as they appeared in the *Veterinary Record*, and were approved.

The Secretary read the financial statement of the Division which disclosed a satisfactory position and was approved by the members.

Apologies for absence were received from Messrs. Begg, H. W. Robson, W. Hepburn, and J. I. Edgar.

Messrs. Begg and Edgar at the same time tendered their resignations from the Division—Mr. Begg on account of the great difficulty he had in attending meetings from far-off Inverness, and Mr. Edgar because of his leaving the district to take up practice in Sussex.

The resignations were accepted by the members with great regret.

Correspondence.—The Secretary read a letter, dated 16th December, from the Aberdeen District Branch of the National Farmers' Union of Scotland, asking for the scale of fees and the mileage charges of the veterinary surgeons in the district. The Secretary read a reply to that letter, dated 19th December, in which he stated that the matter would be brought up at the next meeting of the Division and that he would put the request before the members and write as he might be instructed.

Most of the members spoke on the question, and the unanimous feeling was that no such scale of charges should be given to any outside body and, on the motion of Mr. Russell, the Secretary was instructed to write the National Farmers' Union to that effect. At the same time, the Secretary was instructed to send to all the members the scale of fees which was drawn up a few years ago by the Division and amended at this meeting. It was clearly understood that this scale of fees would be merely a guide to the members, especially to younger members coming into the district, and that it was in no wise binding and was only for the use of veterinary surgeons in the district.

Election of Office Bearers.

President.—Mr. George Howie (County Veterinary Inspector, Aberdeen) was unanimously elected.

Vice-Presidents.—Messrs. A. Sievwright (Tarland) and John Lyon (Banff) were elected.

Secretary and Treasurer.—Mr. J. McAllan was re-elected.

Council.—Messrs. W. Anderson (Keith), J. Anderson (Keith), D. Crabb, (Fraserburgh), R. E. Drennan (Aberdeen) and J. C. Grant (Aberdeen) were elected *en bloc*.

The President's Address.

The President (Mr. W. J. Rice) then gave his Presidential Address as follows :—

I am just completing my year of office and, as I vacate the chair, I cannot help thinking that the duties have been very light and the position a very comfortable one. I recall the fear and trembling with which, twelve months ago, I accepted office. I was one of the recent members of the Division, young and very inexperienced, if you like, and I wondered: "Why have you elected me?" and "Why did I accept?" By this time these emotions and misgivings have given place to a hope that I have occupied this chair with a dignity equal to, but never surpassing, that shown by previous holders of the office. I have done very little during my term of office, and I can assure my successor that so long as we have Mr. McAllan as our Secretary so long will the office of the President be a sinecure in the real sense of the word. I offer him my thanks, coupled with that of the members, for all he has done and is doing for the welfare of our Division. Undoubtedly our success is measured by the qualities of our Secretary, and whether calling meetings, obtaining speakers, or dare I say, collecting subscriptions, he does all so methodically, yet so gracefully, and we owe him our thanks for the time and patience he expends on our behalf. (Applause.)

I have said that I have done little or nothing beyond conducting the meetings and perhaps I might include my visit to the Annual Congress; but I have gained a lot. I have gained the acquaintance of my colleagues, I have learned to know them better, socially and professionally, and I have expanded my knowledge in no small degree. I admit these benefits and I am bold enough to say to you and as many as may read my words that one can never estimate the value of membership of a Division of the N.V.M.A. One may spend time and money getting to the meetings and bring back nothing tangible—but we bring back something immeasurable, something as elusive as the perception that recognises it, something to which we add by each successive meeting that we attend, yet which is not appreciated by many, something of a goodwill between our members that will banish the rivalry and distrust that often exist between neighbouring surgeons, between practitioner and official; we bring back something of an admiration for the other fellow's views, his handling of a case, his gift of diagnosis, his vision in research; we bring back a belief that the other fellow appreciates our effort, our difficulty, overlooks our error and applauds our success; we bring back a something, which, *in toto,* makes us better practitioners, better officials and better friends.

Veterinary science marches on, and yearly our knowledge is being added to. We older graduates, and I suppose that I approach that category, if we are not to be "dated," left behind in the rut, or overwhelmed by the accumulating knowledge, must keep up-to-date. There is no easier way than by being a member of the nearest Division, by subscribing to the parent association, the N.V.M.A., and supporting its official journal. By this means we are made aware of any advance in the knowledge and treatment of disease, and, being aware of it, we may examine it, and apply it under our own local conditions, and with our own local experience. The exchange of such observations cannot but help the general march of progress.

The best medium for the exchange of views is, without doubt, our official journal *The Veterinary Record.* As a Division, our reports and discussions are submitted to it for publication, but that alone is not enough to make the paper of maximum value to the Profession as a whole. Only by individual contributions, such as clinical articles, narrating failures as well as successes, can the fullest benefit be obtained from our own publication. It is not given to all to have a facile pen, nor yet a fluent speech, but the *Record* staff will polish up your article and thank you for the job of it. What a live journal it would be if we all sent in an article from time to time!

So much for the value of the Association to the post-graduate. But when I think of the graduate, I cannot forget the student who will take up our task when, through ill-health or old age, we lay it down. The Colleges certainly keep up with the advancing times and I see wisdom in extending the course to five years. It will enable a clearer, quieter study of the necessary subjects. It will prepare the student not for a "cram" and an "exam," but will equip him better for the professional life. What I would regard as a bigger problem for our students is not the assimilation of all the theoretical knowledge necessary for the Diploma, but the acquiring of that practical experience which will make them successful practitioners. Our Colleges cannot provide sufficient practice for their students, nor have we hospitals and infirmaries where all types of disease may be centralised. Here our medical confrères have an advantage —and yet practical experience is essential on the very first case that a new graduate may handle. Only by a successful pupilage can the new graduate lay the bogy of fear and indecision that haunts him on his first case. Without it he can scarcely expect his principal to believe that he is the experienced and capable assistant of the advertisement.

It is essential, therefore, that every student should see practice. The colleges or the R.C.V.S. cannot remove the difficulty, as they could never make pupilage compulsory without invading the freedom of the practitioner. Many veterinary surgeons would not admit students to their practices on any consideration. And it often happens that those who shut out the students are the very ones to lament on the practical inefficiency of their locums or of young graduates in general!

I have had students since I was able to accommodate them. One I have tolerated, another I have found original, another studious, another keenly practical, and I have helped them all along their course, as best I could, recognising that their success at College and in after life was a concern of mine as a member of the noble profession to which they aspired. Their success would do me no harm and I would at least gain the satisfaction that comes from helping our neighbour.

We are pleased to recognise that our Profession is coming more into prominence, and any advance but points the way of a fuller recognition of the value of Veterinary Science to the State. With this essential growth in State Veterinary Administration there is a danger, and it appears to me to be this. There is a possibility that the majority of our new graduates will be absorbed in official appointments. General practice with its irregular hours, its uncertain

income, may not attract one, and when one becomes an official one has a steady income and a possible pension in one's later years.

Many practitioners become Officials for County bodies, etc., but one rarely hears of an official becoming a general practitioner! Agriculture will always and ever need the private practitioner. He is part and parcel of it. When, as now, agriculture is depressed, he is depressed, but depression is not the normal state. The country thrives only when our agriculture thrives and if a prosperous agriculture is essential to our welfare, then not because of politics, but in spite of them, the present difficult phase must pass.

General practice, with its varying daily round, and its fluctuating balance-sheet, has an attraction that administrative work lacks, and many practices bring in an income greater than most appointments. If, therefore, general practice is to march abreast with administrative practice, the supply of graduates for the farm and the field must be maintained. This can best be done by allowing students in their college years to see practice, to appreciate its variety, learn of its drawbacks, and feel its responsibilities. As practitioners we must give our successors a chance to learn and in teaching them in our practices we would benefit greatly. A fresh idea from the College might change the outlook. A teaser of a question sends us to a neglected text-book and the answer is an advantage to both. I could enlarge on this theme for long enough, but that is not the purpose of this address. I wanted to place before you two aspects of professional life, or politics if you like, that have often intrigued me. I have wondered why so many of our graduates of the Royal College remain outside the National Veterinary Medical Association: I can see no reasons but indifference or perhaps petty jealousies. I have wondered why so many students are unable to get placed during the vacations. I can again see indifference and lack of sympathy as the evils. One can soon get rid of the student who is a hindrance and even narrow his chances of getting placed elsewhere, but a student who is keen and helpful is always welcome at the vacations.

I hope, Gentlemen, that this paper will be accepted in the spirit in which it has been prepared, a spirit of goodwill, influenced no doubt by the time of the year. I have already given a technical paper and my theme to-day is more in keeping with the orthodox style of Presidential Address. I thank you, Gentlemen, for your support during the past year and I am glad to have had the honour of serving you in some small way.

The address was very cordially received by the members, and on the motion of Mr. Grant, seconded by Mr. Howie, Mr. Rice was unanimously thanked.

The Secretary added a few words of high commendation of the President for the latter's exceedingly able and perfectly-expressed address.

The members spent the remainder of the time in a most enthusiastic and interesting discussion on interesting cases. Almost every member had some case to bring up and the range of subjects was exceedingly wide. At well beyond the usual hour, the meeting broke up, everyone voting it a most successful gathering.

It was left to the members of Council to arrange for the next meeting, which takes place in August. The general feeling of the members was that it might take the form of an outing to some place further north.

Mr. Rice was then most cordially thanked for his conduct in the chair during his presidency, and the hope was expressed that he would continue to take his usual keen interest in the doings of the Division.

J. McAllan, *Hon. Secretary.*

Mid-West and South Wales Division, N.V.M.A.

Annual Meeting at Bristol.

Discussion on the West of Scotland Division Scheme for the Eradication of Bovine Tuberculosis.

A material and substantial addition to the great volume of discussion by members of the profession of what is now succinctly designated "The West of Scotland Scheme," was made on the occasion of the Annual Meeting of this Division, which was held at the Royal Hotel, College Green, Bristol, on January 17th, 1930.

The meeting was also noteworthy as witnessing the election of officers of the Division for the ensuing year, and at the outset the chair was occupied by the retiring President, Mr. R. W. Hall, of Barry. There were also present Messrs. A. S. Adams, J. J. Aveston, J. R. Barker, J. W. Baxter, E. C. Bovett, J. C. Coleman, B. H. Gale, A. F. Good, G. C. Henson, J. R. Hewer, J. Howard-Jones, T. J. Margarson, R. Moore, J. V. Powell, C. J. Pugh, W. D. Rees, H. S. Robinson, B. Sayer, E. Sayer, W. M. Scott, E. E. Seldon, W. R. Watson, W. Webster, H. C. Wilkins, and C. E. Perry (Hon. Secretary).

Visitors: Mr. W. B. P. Beal (Bath), Mr. H. W. Steele-Bodger (Tamworth), Mr. C. H. Ducksbury, and Dr. W. G. Savage (Medical Officer of Health for the County of Somerset).

The minutes of the previous annual general meeting, which had received publication in the *Veterinary Record*, were taken as read and were confirmed and signed.

Correspondence.

(1) From Messrs. W. A. Austin, Hall Masheter, G. P. Male (President, N.V.M.A.), and T. B. Yarrow, apologising for their inability to attend the meeting.

(2) From Major A. C. Duncan (Cirencester), requesting the Division to accept his resignation from membership, as he found himself unable to be present at any of the meetings of the Society. This letter was referred to the Council of the Division for consideration.

(3) From the Secretary of the Royal Sanitary Institute, inviting the Division to appoint delegates to the Congress of the Institute to be held at Margate from June 21st-28th, 1930.

It was agreed that a delegate be sent and that the Council should appoint.

(4) From the Secretary of the N.V.M.A., acknowledging, with thanks, the receipt of suggestions forwarded by the Division relative to the naming of grades of milk which had been proposed at the Congress of the Association at Ayr and sent down to the Council for designation.

Mr. Coleman said that the Veterinary Officers and Public Health Committee of the N.V.M.A. had given

several hours' consideration to the suggestions which had been sent up from various quarters, and the ultimate recommendation to the Council of the Association on the matter was that there should be three grades of milk, to be named respectively "Standardised milk from cows which have passed the tuberculin test," "Standardised milk," and "Standardised milk (Pasteurised)." When that recommendation came before the Council he (Mr. Coleman) objected very strongly to that nomenclature, on the ground that it did not differentiate satisfactorily between the two first grades. He said that he could not accept that nomenclature unless either the letters A, B, C, or the numbers 1, 2, 3 were adopted in connection with them. He asked the President to call upon Colonel Brittlebank to say a few words, and the latter endorsed his opinion and proposed that the matter should be referred back to the Committee for consideration, and that all the veterinary officers in the employment of local authorities should be invited to attend a meeting, in order that the matter might receive full discussion and a satisfactory nomenclature be arrived at.

The President thought that the thanks of the members were due to Mr. Coleman for the action he had taken in thus representing to the N.V.M.A. Council the views of the Division. (Applause.)

(5) From the Secretary of the N.V.M.A. *re* sheep scab, to which the Hon. Secretary spoke as follows: The members would remember that they had a letter from the "National" asking them for suggestions as to the control of sheep scab, which would be forwarded to the proper quarter. The following resolution had accordingly been forwarded: "That all sheep coming from an infected geographical area should be examined by a veterinary inspector one month after arrival on the premises."

The Secretary of the "National" had written, informing him that that resolution had been transmitted to the Royal Agricultural Society of England, who, in turn, had forwarded it to the Ministry of Agriculture. He enclosed a copy of the Ministry's reply to the Royal Agricultural Society of England, and said that he was desired by the Society to ask for any comments or observations that the Division might care to make on the Ministry's letter.

The Ministry's letter was as follows:—

Ministry of Agriculture and Fisheries,
7, Whitehall Place,
London, S.W.1.
14*th November*, 1929.

Reference No. T.A. 32891.

Sir,

Sheep Scab.

I am directed to refer to your letter of November 6th, and to say that the Ministry has given careful consideration to the resolution passed by the Mid-West and South Wales Division of the National Veterinary Medical Association of Great Britain and Ireland suggesting the veterinary examination of sheep one month after arrival from an infected geographical area.

The resolution pre-supposes that the sheep will remain at the place of destination one month. This, however, is frequently not the case, for in a large proportion of instances, the sheep will have been moved to other premises before the expiration of one month from the date of arrival. The procedure suggested in the resolution would therefore prove unworkable in practice.

Assuming its practicability, however, it would involve a heavy expenditure on the part of Local Authorities who would have to provide veterinary inspection. This expenditure would not be justified, since the veterinary examination at the stage proposed would not achieve the purpose aimed at because it would not furnish any guarantee that the sheep were not incubating sheep scab. Experience has shown that at certain seasons of the year, and sometimes after an inefficient double-dipping, or a single-dipping, the development of clinical evidence of disease is delayed for many months. In certain cases of recrudescence of disease on the same premises the period has been as long as 10 or 11 months and a period of six months is very common. Such cases as might be detected by the suggested veterinary examination would be those showing clinical signs of sheep scab, and these should in any case be reported by the owner in pursuance of his obligation under Article 1 of the Sheep Scab Order of 1928.

As your Society is aware, badly infected areas are dealt with by the application of Parts II and III of the Sheep Scab Order of 1928, which require the double dipping within the previous 56 days of all sheep moved out of such areas unless the sheep are intended for immediate slaughter.

I am, Sir,
Your obedient Servant,
(*Signed*) P. Smart.

T. B. Turner, Esq.,
Secretary,
Royal Agricultural Society of England,
15, Bedford Square,
W.C.1.

On the proposition of Mr. Coleman, seconded by Mr. Sayer, the letter was referred to the Council for consideration.

Continuing, the Hon. Secretary said that at their last meeting they sent up a further resolution relative to the eradication of sheep scab. He had received a letter from the Secretary of the N.V.M.A. saying that that resolution had been forwarded to the Secretary of the Royal Agricultural Society of England, who would doubtless bring it before his Veterinary Committee at the first opportunity. The resolution, said Mr. Perry, was to the effect that double dipping should be made universal throughout the country, but he had had no reply to that, as yet.

County Veterinary Officer for Somersetshire.

The Hon. Secretary informed the meeting that he had had a good deal of correspondence concerning the above appointment, which had recently been made.

Mr. Coleman said that that matter had been under consideration by the Council of the N.V.M.A., and he thought it would be inadvisable to discuss it then. The point was, of course, that the appointment had been offered, and accepted, at a salary which did not conform to the Association's scale for such a post.

Dr. Savage, speaking at the invitation of the President, said: "I wish I had known you had a scale: I should have strongly supported it, if I had. We did not know you had a scale in connection with these appointments at all."*

The President: "It is very satisfactory to know that fact, Doctor, because there certainly was an idea abroad

* [On November 7th, 1929, a letter was sent by the Association, addressed to Dr. Savage, saying that the minimum salary laid down by the N.V.M.A. for such an appointment was £700 per annum, and that the Editorial Committee of the Association could not publish an advertisement of such an appointment in the *Veterinary Record* unless the salary offered was in accordance with the Association's scale.—Ed.]

that the appointment was made with your cognisance of the scale, and I am very glad that you have cleared the air in that respect."

Dr. Savage: "If we had known of it, I think perhaps we might have got up to your scale."

The correspondence relative to this matter was referred back to the Council for further consideration.

Hon. Secretary's Report.

Mr. C. E. Perry now presented his report, as their Secretary, as follows:—

"During 1929 we have held our annual meeting, three general meetings and three council meetings.

The average attendance at the general meeting was 23, and at the council meeting 11 (out of 17). The present membership is 77, excluding seven Honorary Members. Two new members were elected and I regret to have to report the death of two members during the year.

"We are indebted to Mr. W. M. Scott for his paper on Sero-vaccine Therapy at our Bath meeting; also to Messrs. J. L. Perry, Lewis and Evans for introducing clinical cases at the Cardiff meeting.

"The most interesting feature of the year was the Summer meeting, held at Barry Island by invitation of the President. At that meeting Mr. Howard-Jones gave us his report on the Zurich Congress of the Royal Institute of Public Health, and also introduced a paper on tuberculosis. We were honoured by the presence of W. N. Davies, Esq., Glamorgan C.C.; Howell Williams, Esq., Chairman of the Barry Urban District Council; Councillor E. B. Smith-Jones, Chairman of the Health Committee of the B.U.D.C.; and Dr. E. J. Davies, Deputy M.O.H., Barry, who took part in the discussions.

"After the business proceedings we were taken by char-a-banc to the principal places of interest in Barry, including the Public Abattoir, returning to 'Merrie Friars' for tea at the invitation of the President, Mr. R. W. Hall. This terminated a most interesting and instructive day."

The report was received and adopted.

Hon. Treasurer's Report.

Mr. A. S. Adams, in presenting his report as Hon. Treasurer, said that the accounts for the year had just been placed in their hands. The income of the society was about that of last year, but subscriptions were somewhat slow in coming in; perhaps if the subscription were larger it would be an easier matter to collect it, but members had a habit of waiting for two or three years until the item assumed considerable proportions.

The Balance Sheet showed the finances of the Division to be in an eminently satisfactory condition.

Turning to the accounts of the Division's Benevolent Fund, Mr. Adams said that the only income during the past year was a sum of £8 from the £400 Consul investment, and his own donation. The expenditure during the year, however, had been *nil*.

In moving the adoption of the Hon. Treasurer's report, Mr. Coleman congratulated him upon his "very economical balance sheet." It was, however, very surprising to him to know that the Benevolent Fund showed all receipts and no payments, and it had occurred to him whether or not their Treasurer might care to extend the name and scope of that Fund and call it the Benevolent and Defence Fund. It appeared to him that the majority of the members of that Society were not likely to require benevolence, but the Fund might be useful for legal defence purposes. There would then be some likelihood of some use being made of the money.

Mr. Rees seconded the motion for the reception and adoption of the Report and Balance Sheet, and it was carried unanimously.

The Hon. Treasurer, speaking to the suggestion made by Mr. Coleman, outlined the genesis of the local Benevolent Fund, and expressed the view that, while it was of great importance that members of the profession should protect themselves in the matter of legal defence, it would not be justifiable to utilise that Fund in such a manner. Not only was there in existence a well-established National Veterinary Defence Society, but it would be remembered by most of them that they had a recent and outstanding instance of the value of the local fund as an instrument of benevolence.

The Hon. Secretary having supported the remarks of Mr. Adams in this connection, the meeting passed to the consideration of the next business.

Election of Officers.

The retiring President (Mr. Hall) said that he would like to take the opportunity, at that juncture, of thanking the members of the Division for the most generous and loyal support which they had extended to him during the past year. He wished particularly to thank those gentlemen who had come forward with papers and cases of interest for discussion, also those members who had regularly attended the meetings and taken part in those discussions, and last, but not least, he desired to express his gratitude to his co-officials, Messrs. Perry and Adams, for the able way in which they had supported him and for the good advice they had extended to him during his period of office. It had been an absolute pleasure, so far as he was concerned, to occupy the chair during the year, especially in the way that members had accorded him their support, and he could only hope—and now he was going to nominate their new *President*—that Mr. W. R. Watson (loud applause) would be the recipient of that support in an even greater measure than himself, if that were possible. He thanked them most sincerely, and asked them, with the greatest confidence, to accept the name of Mr. Watson as his successor. (Applause.)

Mr. Coleman seconded the proposition, which was carried with acclamation.

Mr. Watson, on taking the chair, expressed his keen appreciation of the honour, and proceeded to say that he did not think it was usual for a newly-elected President to make a speech, but there was one thing that struck him very forcibly in reading the *Veterinary Record* recently, and he would like to be allowed to comment upon it. They, too, would have read with interest the published papers and discussions upon the important question of veterinary education, wherein it was stated that it was essential to have a five years' course. He did not think that anybody who had had experience would quibble at that, but what struck him as peculiar was that one gentleman said that what was wanted was more education and less craftmanship. He begged to differ from that very strongly. After all, operative technique was craft. The chief aim of veterinary education might be the acquisition of scientific knowledge, but if one had not got the craftsmanship to apply that science one was not going to do much good, and his experience of pupils and locums was that the more highly scientific the pupil, the less use he was to one.

He felt that the great thing lacking in veterinary education was attention to the all-important matter of the practical side. He believed that a five years' course was coming—and the sooner it came the better for the profession—but included in that five years' course should be compulsory pupilage; no man should get his diploma without being able to demonstrate that he could do the work as well as knowing it. (Applause.)

The election of the remaining officers was now made, as follows:—

Vice-Presidents: The retiring President and Messrs. Barker, Henson and Moore.

Hon. Treasurer: Mr. A. S. Adams (re-elected).

Hon. Secretary: Mr. C. E. Perry (re-elected).

Council: The President, Hon. Treasurer and Hon. Secretary (*ex-officio*) and Messrs. Atkinson, Aveston, Barker, Bovett, Coleman, Hall, Hall Masheter, Henson, Hewer, Moore, Powell, Rees, Sayer (E.) and Scott.

Representatives to Council, N.V.M.A.: The President, Mr. Coleman and the Hon. Secretary (*ex-officio*).

The West of Scotland Scheme for the Eradication of Bovine Tuberculosis.

Mr. Howard-Jones, opening the discussion at the request of the President, said that the matter of the eradication of bovine tuberculosis was one that he had always desired to see approached from a national standpoint and one upon which he offered them his opinion with all due humility.

His first pleasure and duty was to offer hearty congratulations to the West of Scotland Division for their splendid initiative in producing that scheme for the profession's discussion and possible resolutions, and he trusted it might have the most wonderful results. But whatever success or failure it might meet with, they, as a profession, could only offer their blessing to those who had given them the opportunity of drawing public attention to the losses suffered both by agriculture and public health and which had for generations been caused by that disease.

It had always struck him that the past generation, in whose time the actual cause of tuberculosis was discovered, did nothing whatsoever to try and prevent bovine tuberculosis. They did nothing—and it was left to them of to-day as an heirloom, and they did not wish to leave things as they were for their descendants without, at any rate, making some sort of a start on its eradication, and this scheme, while at present only applicable to selected areas, was a wonderfully fine model. Before, however, that scheme could possibly become practicable, there should be, in his honest belief, some active steps to reduce, first of all, the actual incidence of bovine tuberculosis throughout the country.

Might he speak for one moment on their present position, and try to show where they were still sadly lacking, as a nation, in activity against even the actual infective animals. One opener of a divisional discussion estimated the percentage of infected animals at 25 per cent. Admitting that to be possibly a low estimate, it gave them something like 800,000 tuberculous animals to deal with, and he should certainly say that, taken county by county, that figure was not one little bit too high.

It was also recorded that 52,222 animals were slaughtered under the Tuberculosis Order during the years 1926-27-28. That did not by any means give them an accurate idea of the incidence of bovine tuberculosis, because to them they could add those animals found affected upon being slaughtered for human food, and others which were removed surreptitiously to knacker-yards and kennels. For example's sake, they would take the 52,000 quoted as having been slaughtered under the Tuberculosis Order. According to that Order's ruling, an animal must be manifesting clinical symptoms of the disease before it could be brought under the order and it was common knowledge that every animal thus manifesting was capable of infecting other animals and the building occupied. The result of all that was that they were unconsciously building up another 52,000 for the Tuberculosis Order to deal with. He also begged to be allowed to point out that that enormous figure only related to those animals reported or discovered, and eventually dealt with—Heaven only knew how many more during that period were not reported or discovered, or even not seen by anyone but the owners or attendants. So one could not help asking "Is it not time now for every cow, at any rate, to be periodically examined throughout the country as a preliminary step to the preparation of the country generally; and for the eventual introduction of a scheme such as this, on a national basis?" People in the street would ask them, "Well, isn't that being done? I've heard about tuberculosis, and I see institutions for tuberculous people to be treated there, and I know of lots of people who died of it, but I didn't know it affected cattle." It was perfectly evident to him that the country's general education on that subject was practically negligible and in the programme of preparation there should be a wide propaganda concerning it.

He had always thought that the Ministry of Health missed a splendid and easy opportunity of instituting routine inspection of dairy cattle when they introduced the Milk and Dairies Order of 1926. Under that Order each producer of milk had to become registered by the local authorities following the sanitary inspectors' examination and acceptance of the hygienic properties of the cowsheds and dairies and their surroundings. Many producers thought that their cows were also to be subjected to inspection before their owners could be registered. If only the Ministry had then seen it well to say that since it was the cow that actually produced the milk, the producing animals should be periodically inspected, and the owner was to produce his veterinary certificate to the effect that the owner's animals had been inspected and were found, on certain dates, to be free from clinical evidence of diseases likely to endanger the health of the persons consuming the milk produced by him, such a step would have brought every milking cow under a periodical inspection and would, moreover, have given the veterinary profession an opportunity of proving its value. It would also have caused all cases of clinical manifestation to be reported at a far earlier date than was now the case, and would, undoubtedly, have opened the eyes of thousands of Local Authority councillors, rural and urban. The country at large would then become aware of the condition of things tuberculous generally.

As a further step towards preparing the nation for that scheme, he would suggest assisting those patriots (as he called them) who produced milk from tuberculin-tested herds and who received no encouragement from the Ministry, who charged them licence fees for its production and sale, nor from the public—by subsidising them to the extent of their cost of testing their herds, and the losses entailed by their disposal of reactors. If, as a result of such encouragement, the number of reactors in any area became too numerous, establishments could be instituted for their segregation, fattening, and slaughtering. He did believe that an increase of tuberculin-tested herds would immediately be found to occur if that step were taken, and it certainly would be a cheap method of preparation towards the introduction of the West of Scotland scheme. It would also help to form a basis for its commencement in fresh areas, besides awakening the consciences of most other milk producers.

If then, in years to come, those steps, or the scheme they were discussing were introduced, there would have to be some further provision for the disposal of reactors and animals slaughtered under the Tuberculosis Order. He would suggest, at those institutes where the reactors were fattened and slaughtered, the erection of plant for their conversion into substances of commercial value, the extraction of all fat as oil, and the preparation of hides for the tannery. Thus the compensating Government could arrive at a fairly profitable salvage from their condemnation. One thing further, the Government would probably need to furnish would-be farm institutes of tubercle-free cattle for sale to

accredited persons commencing their own free herds, in order to restrain the price of such cattle within reasonable limits.

To summarise his conclusions of what should be done at once to prepare the way for the adoption of that scheme, he would say, first, the organisation of a routine veterinary inspection of all dairy cows throughout Great Britain, and the careful examination of all animals arriving from overseas and at markets. Second, the encouragement of those producing milk from tuberculin-tested animals by subsidisation, as previously described. He trusted that he might be forgiven for not having alluded to any of the details of that scheme, and for confining his remarks to an attempt to show the need that existed to prepare for its national adoption. Without such preparation and a pronounced decrease in the incidence of clinical tuberculosis in their cattle, that scheme was not within the bounds of possibility, but he did see, on the other hand, that it might be successful at present in those patches of country containing several farms of ample size, possessing valuable stock and highly-educated owners who could combine and agree to their patch being made entirely tubercle-free at Government expense and to their own mutual profit and benefit, as compared with densely-populated areas where farms were on the tiny side, and everybody produced milk, and where a great majority of milking cows were purchased on account of their milk being sold for cash, and the calves had to be disposed of when very young, as a consequence.

Before that scheme was given a chance of success, it would be necessary to reorganise the basis upon which thousands of dairy farms were run to-day, this scheme having its foundation upon the breeding of animals from tubercle-free stock, and the education of farmers as to the rearing of calves in hygienic accommodation and under far more wholesome surroundings than many of them were seen in to-day.

He thanked them for their kind hearing of his very brief and imperfectly-expressed opinion, and trusted that the discussion would be participated in by everyone.

Mr. Steele-Bodger, who was next called upon to speak, said that in the first place he desired to thank the members for the very kind invitation from their Secretary to attend there that afternoon. It had given him great pleasure to be able to come and he felt that he ought to congratulate them upon their numerical strength; outside the "Midland" he had never seen a larger or more representative gathering at a divisional meeting.

He thought their thanks were due to the West of Scotland Division for putting forward a scheme for discussion, and such discussions as it was producing up and down the country should prove of very great value to the parent body of the Association in deciding upon a scheme which they could recommend and forward to the proper authority as the considered veterinary opinion in this country.

He wished to state right away that in his opinion the West of Scotland scheme must fail. It might be applicable to the U.S.A. where the farms were miles apart, the drinking water and drainage systems quite separate and distinct, but with the exception of a few isolated districts it was not suitable to this country where farming was intensive, where neighbouring farms were cheek by jowl and where water supplies were common to several farms and where ditches formed a common drain for several farms in a district. Adjacent farms were commonly in different administrative areas.

He felt very strongly that any scheme to be successful must be a national scheme and not an area scheme.

At Birmingham Mr. De Vine had urged a national scheme, but his suggestion was that all the reacting cattle in the country should be slaughtered forthwith—his estimate of the total number of reactors being 20 per cent. He feared that Mr. De Vine was over optimistic; his own opinion was that the percentage was very much higher. As a result of testing a large number of herds he was satisfied that the percentage of reactors, taking the herd as a whole, including everything from old dairy cows to four months' old calves, was probably about 35 per cent. In dairy cows alone he was certain the percentage was much higher, probably above 70 per cent.—in his district it was not uncommon to get 100 per cent. reactors in the dairy cows, 90 per cent. was quite common and 80 per cent. still more common. What was going to happen—looking at the matter from a selfish point of view—to him if all those animals were wiped out? Looking at it from a somewhat less selfish point of view—but not entirely unselfish—what was going to happen to the farmers who owned those dairy herds? What was going to happen to the milk supplies of such towns as Birmingham? In his opinion it was not necessary to slaughter all the reacting animals right away. Many had infections which were very slight though all were, of course, potential infectors.

The dangerous animal, to his mind, was the old lean reacting cow, which milked well, ate well and coughed well; the old chronic "lunger" who had waged war against the infection and had established undoubtedly a considerable degree of resistance, but who was capable of infecting all and sundry. In his opinion this was a more dangerous animal than the "screw" cow and her elimination would do more to reduce the incidence of tuberculosis than the present Tuberculosis Order under which a farmer received 45s. for an animal whose value was 20s.

The first step to be taken in the eradication of tuberculosis was for all the cattle in the country to be tested; the cost to be borne by the state. The testing should be done under the control of the County Veterinary Inspector which every county should possess, and whose duties it would be to advise, supervise and co-ordinate the work of all veterinary practitioners—not the present so-called part-time inspectors. He thought that a number of the misleading results—so-called doubtful reactors—which one was bound to get when one started using the intradermal test, would be eliminated if one had available the experience of the County Veterinary Officer in interpreting the results. It was as well to put down the doubtful reactors as positive because, in his experience, doubtful reactors were always old dairy cows, not young stock, and his grossest reactions were generally in his youngest animals, which he thought pointed to a more recent infection.

As a result of the test the percentage of reactors in various parts of the country would be accurately ascertained, but before this could be done properly, tuberculin should be standardised. He was loth to believe that the extraordinary results which he got sometimes were due to faulty testing either by himself or by other veterinary surgeons. Recently he had occasion to test some animals which were introduced into a herd only the week before, having been bought at a sale of tuberculin-tested animals. The date on the certificate was seven days previous, and when he tested with the double intradermal test, one of the animals gave an enormous reaction. Admitting that there was a period of incubation, he could not quite think that one would get a reaction like that seven days afterwards, and he would hesitate to say that it was due to faulty testing; he would suggest that it was due to the use of different tuberculin. In passing, he felt most emphatically that the use of tuberculin should be restricted to members of the veterinary and medical professions.

If, as a result of the test, certain areas were found which had only a small percentage of reactors and which were or could be *self-supporting*, these areas could be used for rearing and a subsidy paid for each heifer calf reared. The sires would of course be selected.

The cost of this would be infinitesimal compared to the amount spent annually on the upkeep of crippled childrens' homes, sanatoria and the like.

In those districts more heavily infected—and this would, he felt, apply to the greater part of the country—some such scheme as suggested by Mr. Hugh Begg commended itself to him; namely, the destruction of all reacting cows over the age of, say, 10 years; this age limit to be gradually reduced as young stock grew up and replaced them. By the erection of public slaughter houses and with an efficient system of veterinary meat inspection no harm would result to the public meat supply by the slaughter of these reacting animals.

By the testing of young stock it could be decided whether to use them for breeding or for feeding. It was his experience that in bunches of young stock, whether in calf or bulling heifers, or stirks or calves, one seldom got 40 per cent., 50 per cent. or 60 per cent. reactors; the percentage was usually at one extreme or the other. The damage was done, in his opinion, during the calf-rearing period, and if calves were reared in sheds and boxes or yards which resembled muck rucks and one animal happened to be infected, that infection almost always spread to the other calves in a very short space of time, because the original infection was usually through the milk, which meant a bowel infection.

It was of the greatest importance, therefore, that better or more hygienic methods of calf rearing should be adopted and the portable sheds recommended by the West of Scotland, if used at all, should be used to shelter young stock and thus avoid the necessity of bringing them into old unsanitary buildings.

It was necessary, also, to do something to improve the cowsheds, so that the tubercle-free young stock should not be reinfected from them. There should be regular, routine, clinical veterinary inspection of all dairy cows at least every three months and a sample of mixed milk from each herd should be taken by the veterinary inspector on his visit and this sample submitted to the biological test at the county laboratory. In this way, the public milk supply would be safeguarded even from herds which had 100 per cent. reactors

In Staffordshire last year the tuberculous milk from the herds which were regularly examined and the milk regularly tested in this way was only 0·6 per cent. as against 6 per cent. in respect of the other milks.

Much closer co-operation was necessary between the Ministry of Health and the Ministry of Agriculture, and the Tuberculosis Order, the Milk (Special Designations) Order and the Milk and Dairies Order required thorough revision.

He would like to draw the attention of the members to the fact that the Certified and Grade A (T.T.) Milk Producers' Association had had the matter of the Tuberculosis Order and the regrading of milks under discussion recently and one of that division's members (Mr. Coleman) approached them to go into conference with them. He was asked to state that if the suggestion came from the N.V.M.A. officially it would have been welcomed by every member present. They were anxious to co-operate with the veterinary profession in trying to rid this country of tuberculosis and also to frame suitable designations for the regrading of milk.

He wished to say one word about B.C.G. vaccination; opinions differed as to its degree of success in laboratory experiments and it was much too soon to form an opinion of its use in field work. Personally, he had an open mind in the matter; he had vaccinated nearly a thousand calves and some had been twice revaccinated and were now in the milking sheds. It might never prove to be 100 per cent. efficient, but if it was only 50 per cent. or if it only gave immunity to bovines for the first twelve months of their lives, he thought it would have proved its value.

He thought that the present difficulty of differentiating between a reaction due to tuberculosis and one due to vaccination would be overcome.

In their efforts to eradicate tuberculosis from this country they must not forget what he knew to his cost, that the freer a herd was, the more susceptible it was to reinfection, and no one would deny that it would be preferable to have a dairy herd immune to tuberculosis than one merely free from tuberculosis. To summarise briefly, any scheme, to be successful, must be national; it must be compulsory, and not optional.

The scheme should commence with the testing of all cattle at the Government's expense and the slaughter of aged reactors; the institution of public slaughter-houses with veterinary meat inspectors; routine clinical veterinary examinations of dairy herds, together with the biological examination of milk samples; the encouragement of rearing and self-contained herds and their better and more hygienic housing; closer co-operation between the responsible Ministries; the revision of the Tuberculosis Order, the Milk (Special Designations) Order and the Milk and Dairies Order; the standardisation of tuberculin and its control.

In conclusion, it should be remembered that the co-operation of the farmer was essential to the success of any scheme, but that farmers could not afford to be philanthropists; they would, however, always deliver the goods for which they were paid; they could and would produce clean, tubercle-free milk if they were paid for it. The solution, therefore, was that all milk should be purchased on a quality basis, *i.e.*, absence of tuberculosis bacilli, absence of *Bacillus coli*, low bacterial count and percentage of butter fat.

Dr. W. G. Savage (Medical Officer of Health for the County of Somerset), who was now invited by the President to contribute to the discussion, said that the greatest difficulty of the subject was that it was impossible for anyone to hope to cover that very large question, and neither of the gentlemen who had spoken, in their extremely valuable remarks, could hope to do so.

He thought he could be most interesting if he made his remarks from the point of view of an outsider looking at certain aspects of the question. The first point, he was glad to notice, was that the discussion was on bovine tuberculosis and not on human tuberculosis of bovine origin. He had heard many discussions on the latter question, and invariably the participants failed to realise the fact that the control of human tuberculosis of bovine origin depended all the way through upon the proper control of bovine tuberculosis. He had recently brought out a book on that subject, and in the course of writing it he studied very intensely, over many years, all the available literature in this country and in some foreign countries that had any bearing on it, and there were certain phases that struck him very forcibly. The first point was the absence, in spite of the wealth of knowledge they possessed, of exact, specific information on quite a number of fundamental features connected with tuberculosis. That very afternoon they had had various estimates given as to the extent of bovine tuberculosis infection in this country, and he thought they must confess that they really did not know it. Mr. Jones, in opening, dealt with the estimate of 25 per cent. which he quoted; the second speaker talked about a much higher percentage—even as high as 100 per cent. for dairy cattle. Looking into the literature—upon which, of course, he depended—he arrived at the conclusion that one could not put the figure at less than 40 per cent. of dairy cattle, for the country as a whole. Then there was an absence of exact knowledge as to the extent to which there were cases of open tuberculosis; and that was a vital point, because infection was not spread by reactors, as such, but by open cases. Probably the incidence of open tuberculosis was rather less than 0·5-1 per cent., but there again they had no exact knowledge.

Then, it was extremely difficult to get facts upon the question " Is bovine tuberculosis increasing or decreasing in this country? " One gathered the impression that it was about stationary, but one did not know.

But the most striking thing of all, which gave the key to the problem, was that there was very little evidence in regard to the resistance factors. The resistance factor in tuberculosis was of immense importance. They would find a wealth of information about infection, but when they came to the question of resistance factors, and to what extent animals could resist tuberculosis, they found next to nothing in their text-books, yet in human tuberculosis they were finding it the key factor in the question. Were cows resistant to bovine tuberculosis or were they animals possessed of but little resistance? Studying the facts as one knew them, one came to the conclusion that the cow was a comparatively highly-resistant animal. Cows showed more tuberculosis the older the animal; that was contrary to all experience in other animals. If they took man, his resistance was usually lowest the younger he was; with the cow it was the other way. That suggested, he thought, that cows must have a very considerable natural immunity.

That raised an important practical question in connection with control—why did they succumb to tuberculosis if they had that immunity? They succumbed to it because of the aphysiological conditions under which they were dealt with. The natural milk yield of a cow was 300 to 400 gallons a year, and to run her up to two or three thousand gallons was to demand a fearful effort on the part of the cow. Also, the rearing of one calf per year was not natural to a cow. He looked upon the cow as an animal naturally possessing a high degree of resistance, but which went down to tuberculosis because of these three factors which overcame that resistance: the very high milk yield; the very heavy strain of annual rearing, and the very unhygienic conditions under which she was kept.

That had a fundamental bearing upon the problem of prevention. It also raised the question of reactors; so often it was assumed that the reacting cow was the animal which went on and developed tuberculosis until it became an open case and a great source of infection. He ventured to doubt that. The reacting cow was one that had a slight infection, and he thought that those animals, under natural conditions, would probably keep perfectly well. They were having some experiments carried out now to show what was the effect on reactors of keeping them, not under the customary adverse conditions, but under natural conditions of yield and so forth, and in the open air. He believed that a great many of those reactors would not develop progressively, but would show no sign of clinical tuberculosis at all, and he should not be at all surprised if they cleared up entirely.

Another matter upon which he would like information was the immunity question. Was it a good thing to abolish tuberculosis in our cattle in a country like England, in which we could not hope to get rid completely of all risks of re-infection? He was not talking of an island like Guernsey, where it was quite possible to do that. He was not at all sure that if they eliminated tuberculosis on the lines of that scheme, they would not have a cattle population in this country more susceptible to tuberculosis than they were at the present time, for they would have forfeited the natural immunity against tuberculosis that had now been built up. If that suggestion was correct, one would expect Guernseys to go down before infection more readily than our own cattle, and that was an interesting point upon which the experienced gentlemen present might be able to throw light.

All those points seemed to him to bear upon that question of schemes for dealing with tuberculosis. He did not propose to discuss the scheme which was before them, because both the gentlemen who had spoken upon it had damned it with faint praise, and it was perfectly obvious that a scheme of that sort was entirely impracticable at the present time. It was a gesture—to his mind, a very excellent gesture—but it was trying to put into practice what was being done in America, where the percentage of tuberculous cattle was two per cent., as compared with our 40 per cent. and was therefore foredoomed to failure.

Dealing with the practical question of what they were to do with regard to tuberculosis in this country, he agreed with the previous speakers, but he did not agree with the order in which they had put their proposals. In his view they should be put in another order. He thought the main, fundamental thing, before they were going to be in a position to do anything with tuberculosis as a disease, was an extensive education campaign to enlighten the cow owners. Their ignorance of tuberculosis was gross and extreme. Some would feed milk from tuberculous cows to the calves; nobody but a fool or an ignoramus would do that. Secondly, he did not think they were going to do any good with a system of veterinary inspection of cows and other things of the sort unless they had a radical alteration in the environmental condition of the cows. What was the good of all the routine veterinary inspection of cows, as such, unless it was accompanied by an alteration in the conditions in which those cows were kept? They had got to get rid of the ordinary insanitary cowshed; personally he should like to see no cowsheds—just places where the cows could come in to be milked. Then, he did not think any Government was going to pour out money to pay for the testing of cows and disposal of reactors unless they put part of the onus of reporting infection upon the cow owner. He quite agreed with Mr. Steele-Bodger that the Tuberculosis Order was in large part a useless one, and one of the things with which they had to deal was that the cow-keeper should report *suspected* animals, and he should be fined, if he did not report.

When they had dealt with those things, but not before, he was prepared to support measures to reduce infection by veterinary inspection. He was prepared, also, to support measures to increase resistance, such as the better feeding of cows.

Mr. Coleman said that he would like to thank Mr. Howard-Jones for the very able way in which he opened the discussion; also Mr. Steele-Bodger for the interesting contribution with which he had followed the opener's remarks, and Dr. Savage for the innovations which he had introduced into the discussion.

They all knew his views well, but he would like to comment upon two or three of the things which Dr. Savage had said. He indicated that the resistance of the bovine seemed to be in a different ratio from what it was in the human subject. Had it ever occurred to him that the young of the bovine species was very seldom fed upon the milk of the cow; on the majority of farms the young calves were taken straight away from their mothers and fed on substitutes. They did not come in contact with their mothers or other cows until they were three or four years old, but if by chance the calves were fed on their mother's milk, and this tuberculous, then they would become affected with the disease in early life.

He would like to ask Dr. Savage whether he was aware that the practice of vaccination had been adopted in veterinary medicine—Calmette and Guèrin had done a lot of work in that direction. The calves had to be immunised each year for five years, and then they had to keep them under observation and follow them to the slaughter-house, which was almost an impossible thing to do.

Dr. Savage had referred to Mr. Hosier's scheme, but he would like to tell them that a large number of Mr. Hosier's cows were reactors, and that he kept them for one milking period only and then they went out of the herd.

With regard to Jersey and Guernsey cattle, the only experience he had had of them had been where a farmer had kept one or two in his herd for his own household, but his experience was that they were not so liable to infection as the other breeds.

He thought the enormous percentage of reactors among all breeds which occurred in his district at first test (approximately 50 per cent.) was largely due to the insanitary sheds, which were originally used for dry cows and which had been converted into milking sheds. Their condition was conducive to the spread of infection if there was a tuberculous cow amongst the animals housed therein. As a proof of that statement he could give them an instance of a test he made on some occasions. He would go through a cowshed testing the animals, and would find no reactors for a considerable number, but when he came to one it frequently happened that a whole string of reactors followed.

Mr. Scott said he came to listen and not to speak, but he must obey the request of the chairman. He had been greatly interested in the discussion on what they all agreed was an enormous problem—a problem so large that with all the intelligence mustered there that day he feared they would be unable to solve it. In his view, the scheme before them was based upon a very hypothetical foundation and therefore doomed to failure. To make anything of a success of it the monetary element must enter in very largely and he questioned if any Government would grant the enormous sum of money necessary to bring it to fruition. Personally, he did not think it would. Nevertheless, it was all to the good that schemes such as that should be discussed, in order that the profession might succeed one day in bringing order out of chaos.

To his mind they must look upon that problem in a

logical manner and get to the foundation of the trouble; they must build upward and not tackle the subject matter halfway up, so to speak.

Bearing that in mind, three distinct aspects arose; distinct, but still dependent one upon the other.

First, he should like to see the housing of the cow placed upon as sanitary a basis as the housing of man, and if the Government allocated so much money in the various counties for this purpose, a purer and better milk would be produced and the health of man and beast improved thereby.

Second, the dairy farmer should be educated in the principles of dietetics. One must remember that the cow was a vast milking machine. The amount of fat which passed out of the milch cow in a year was enormous and in nine cases out of ten it was not supplemented by a diet in proportion to the loss sustained. Tuberculosis in the milch cow, then, was not so much an *infectious* disease, as a *deficiency* disease, and that circumstance led him to feel that, no matter what scheme they introduced, if they left out that fundamental point it would fail. They must commence by educating the farmer in regard to sound methods of dietetics.

Third, he held very strongly that milk-recording societies were not unmixed blessings and he would like to see them done away with. They were incentives to depleting the cow's vitality to a vanishing point. The man who had a cow giving 800, 900, 1,000 gallons of milk a year, not satisfied, wanted next year 1,200, 1,500, 2,000 gallons and no cow was ever intended by nature to give such an enormous supply. Still not satisfied with that, he bred from that particular strain and in so doing produced a breed, rich in milk production no doubt, but deficient in disease resistance.

Let them therefore educate the public and then concentrate on those fundamentals; then it would be time to start the West of Scotland scheme. From general statistics they were told that out of three million milch cows in this country there were one million affected with tuberculosis in some form or another, and supposing that by a stroke of the pen that million were eliminated, how long would it be before the others would succumb directly or indirectly under present conditions?—or even under the West of Scotland scheme? Personally, he therefore considered that the whole problem resolved itself into a matter of condition, *i.e.*, environment, mode of living, degree of milk production; alter and improve these and they would exercise a powerful and controlling influence on that, the *bête noir* of bovine scourges.

Mr. Hall said that he had listened with the greatest pleasure to the speeches made by respective members and visitors and he had come to the conclusion that, while the scheme formed an admirable basis for discussion, it was not a practical measure for putting into operation.

He was rather surprised to hear Mr. Scott attribute the larger portion of bovine tuberculosis to dietetic deficiency. How did he explain the fact that it was often the fattest cow, the fattest bullock, the fattest heifer, that had the worst type of tuberculosis? His (Mr. Hall's) view was that the incidence of tuberculosis was entirely due to infection. There was, he admitted, a certain amount of resistance and immunity, because even the oldest and most conditioned cow in the shed when it came into the slaughter-house was the cleanest, that demonstrated the resistance and immunity of the animal.

Infection was the basis upon which they had to work to get rid of the disease; let them eliminate their sources of infection—the open cases of disease—and that would help to reduce the incidence of bovine tuberculosis.

Mr. Howard-Jones stated that he would like to say a few words in reply to Dr. Savage's remarks on resistance. It was quite usual to find an animal six or seven years of age, having, perhaps, within a few weeks, given birth to a calf, and which before that event had shown no evidence of the disease, starting to shew definite clinical signs. In a great many such cases one would find miliary tuberculosis of both lungs. They would also discover numerous examples of old-standing infection in the same cases, probably in the mesenteric lymphatic glands of the bowel, which tuberculous lesions would be bound solid with calcareous deposit, showing that the animal was infected when she was a calf, probably by the milk, and had resisted the disease. Her system had supplied the lime and deposited it there to try and prevent the spread of the disease from those infected parts, until suddenly, at some crisis in her life—as when she was giving birth to a calf—some lesion broke down and infection was scattered throughout her body by the blood stream, and the result was that one found miliary tuberculosis of both lungs.

Therefore, he thought that there was probably, in certain breeds of cattle, a great degree of risistance; they would see it particularly in the Hereford. (Mr. Scott: "You can include the Devon in that remark.") But even in the Hereford they would find sometimes in the mesenteric glands very large masses of calcified tissue.

The Hon Secretary expressed his thanks to Mr. Howard-Jones, Mr. Steele-Bodger and Dr. Savage, who, he said, had come forward in response to his first application to them to participate in the proceedings that day. He was very sorry that Mr. Male had found it impossible to come from Reading.

He thought that it would be a good idea if Mr. Hugh Begg's proposal to kill off all reacting dairy cattle over ten years of age—to which reference had been made by Mr. Steele-Bodger—were adopted. It would get rid from the herd of the old tuberculous cow, and it was she, he believed, who was the general source of infection in most herds.

Dr. Savage had asked, although Jerseys and Guernseys in those islands were immune, was it the same when Jerseys and Guernseys came into this country? Yes, as long as they were kept in herds by themselves, but as soon as these animals were put amongst Shorthorns, for example, they very often, and very rapidly, became infected; so much so, that out of the hundreds of cows he had slaughtered under the Tuberculosis Orders, his worst cases had been Jerseys out of herds of Shorthorns. It was the practice in his district to run a Jersey cow in the Shorthorn herd to keep up the butter fat.

Both Dr. Savage and Mr. Steele-Bodger had said that the Tuberculosis Order was doing practically no good. He disagreed with that. In districts where periodical general inspection was carried out under the Tuberculosis and Milk and Dairies Orders, the clinical cases were taken from the herds (unless there was general inspection the owners would not report).

During the first year in his district many cases of advanced tuberculosis and tuberculous udders giving tuberculous milk were taken under the orders, slaughtered and confirmed on *post-mortem* examination, and he was certain that the slaughtering of those cows had kept much tuberculous milk off the market.

That, in his opinion, was the chief object of the present Tuberculosis Order, and not the eradication of tuberculosis.

The present orders, unless amended and extended, would never eradicate tuberculosis from herds containing 40% of affected animals.

At this stage, the Hon. Secretary read the following communication on the subject under discussion, which had been sent by Mr. J. W. Hall Masheter:—

"I am in general agreement as to the scheme proposed by the West of Scotland Division, and I cannot but think that eventually, with strong and persistent propaganda, the ultimate aim will be achieved.

"There is no doubt, in my opinion, that it is premature as far as public opinion goes, but if it is kept before the public week in and week out, they will gradually become educated, and eventually *demand* that steps be taken to improve the quality and safety of its milk and beef supplies as regards tuberculosis.

"Medical opinion as to clean and safe, or rather *safe*, milk seems to me to begin and end with pasteurisation. Pasteurised milk may be fairly safe, but is certainly is not clean.

"The distance I should go—at present—would be to tighten up the Tuberculosis Order and to extend it.

"What appears to me to be a tremendous step further

in the eradication of tuberculosis would be to have every cow in milk and every dry cow in calf, tested for tuberculosis by the intradermal method by means of a standardised tuberculin before being exposed for sale either publicly or privately; to have a copy of the result of the test signed by the veterinary surgeon who undertook the test, to accompany each cow—*but only for those which had passed the test*; to have, in public auction marts, a special part reserved for the tubercle-free cows.

In explanation of the above :—

1.—Dairymen and farmers would be able to buy with confidence the certified cows, and sellers would get a better price.

2.—Reactors could be sold in the ordinary way, as, although known to be reactors, they would not be showing any clinical signs of tuberculosis and would be fairly safe to buy.

3.—Reactors showing clinical signs would, of course, be taken and killed under the Order as at present.

"This, in my opinion, would be as far as we could go in the immediate present, but the education of public opinion could go on until the time was ripe to take up the eradication in its entirety.

"*Re Accredited Herds.*—My opinion as to this is that these herds should be tested free of all cost to the owner, and the 'licence to produce' certified milk abolished. This should, in my opinion, encourage a greater number of producers to go in for accredited herds, and in course of time 'Areas by Application' and 'Compulsory Areas' would naturally follow."

After considerable further discussion, in which many members took part, the PRESIDENT expressed the view that they owed a debt of gratitude to the West of Scotland Division for bringing the matter forward, but that the feeling of the meeting was that the Division were of opinion that the scheme, while an admirable gesture, was not one which could be put into operation as a practical measure, with any hope of success, at the present time.

He asked the members to accord Mr. Howard-Jones, Mr. Steele-Bodger and Dr. Savage a very hearty vote of thanks for having attended the meeting and giving them the benefit of their wide and valuable experience in connection with the subject before them that afternoon.

The vote of thanks was carried with acclamation, and the meeting concluded with the payment of a similar tribute to the retiring President (Mr. Hall) for his splendid services in this capacity during his year of office.

The members subsequently took tea together.

C. E. PERRY, *Hon. Secretary.*

Derbyshire Division, N.V.M.A.*

PRESIDENT'S ADDRESS AT DERBY.

A meeting of the above Division was held at Messrs. Ramsden's Café, 35 Corn Market, Derby, on Tuesday, January 14th, 1930.

The President (Capt. O. V. Gunning) occupied the chair and there were also present Messrs. P. Abson, T. V. Bagshaw, H. S. Cockburn, J. C. Deville, G. J. Furness, A. Levie, J. McArthur, H. W. Steele-Bodger, E. Wilkinson and W. J. Ironside (Hon. Secretary). Visitor, Mr. R. S. Howe.

Apologies for inability to attend were received from Messrs. G. Howe, E. Marrison, W. Tweed, and Col. Lowe.

A discussion took place as to the time and place of future meetings, and it was agreed that for the next year the meetings be held in the County Agricultural Institute, at 2.30 p.m.

Nomination.—Mr. R. S. Howe, Buxton, was nominated for membership.

* Received on February 5th.

PRESIDENTIAL ADDRESS.

Capt. O. V. GUNNING now presented his address from the chair, as follows :—On being elected to the Presidential pedestal it is customary for the recipient of that honour to show his appreciation by inflicting on his fellow brethren a presidential address. I cannot allow such a privilege to go unheeded and I have therefore penned a few notes for your perusal. Indeed, perhaps it is well to have a stock-taking occasionally, to review the past, to attempt to visualise the future, and by so doing to endeavour to sum up our progress, and as an Association find out where we stand.

In the first place, I should like to express to you the great sense of honour that I feel on being placed at your head for the year 1930. For the past six years it has been my privilege to act as your Hon. Secretary, during which time I have had a good opportunity to gain an intimate knowledge of the Derbyshire Veterinary Association, to gauge its pulse, so to speak, and to ascertain the part it plays and should play in the affairs of veterinary life in the district.

If one goes back to its starting point in 1918, it will be found that it came into being through a feeling of necessity. A small band of neighbouring practitioners deemed it necessary to come to a mutual agreement on pressing matters of the moment which affected them all. It was at this first meeting that the idea of starting a local Association took place, and from this friendly gathering of nine neighbouring veterinary surgeons, at Ashbourne, the Derbyshire Veterinary Association became an established entity.

Over eleven years have elapsed since then, during which time four quarterly meetings have been held annually, almost without a break. Papers have been given and discussions instituted on a diversity of subjects of practical, political, and scientific importance to its members. Also, through the efforts of the Association and especially Mr. Marrison, who was then Hon. Secretary, fees for the work done for the Local Authority have been materially increased.

Has this been worth while? Has the time spent in attending these meetings been wasted? I believe that no one can honestly say but that he never made a better investment. I mention this point because we are a small body numerically, scattered, and often working single-handed, and it will require self-sacrifice often, and always the loyal support, of all members to make the Association as successful in the future as it has been in the past. If for any reason it is allowed to stagnate it simply means that, at some future date, the time will inevitably come when again a band of practitioners will have to come together, unorganised, and without status, to start as they did at Ashbourne in 1918.

There never was a time when unity was needed more than it is to-day. Do we not experience at the present time the results of the isolated self-complacency of the past? The sciences of dietetics and meat inspection are only two instances of fields that have been lost to our profession. The rapid advance in Public Health services, the frequent arrival of new orders and regulations, will constantly require the unity of members watching events and forwarding their interests locally; and as a branch of the "National" we must do our part in assisting and

framing a policy on the various subjects which affect us all.

Then there is the question of "quackery." It is very difficult to understand why, nearly half a century after the passing of the Veterinary Surgeons Act, "quackery" in certain branches of practice seems to be increasing. I am of opinion that no house without a foundation can last for long, but one has to remember that the "quack" fights with weapons not allowed to us. He advertises in the local Press and elsewhere, even on the Railway Station of this city, and is often supported with funds liberally supplied by an unsuspecting public. It is, therefore, essential that, as a body, we shall stand together, and I would here commend to your perusal the recent report in the *Veterinary Record* of the successful R.S.P.C.A. Dispensary at Newcastle under the direct supervision of the North of England Veterinary Association. This, in my opinion, is a step in the right direction and is well worthy of imitation. It is a matter in which acting, not grousing, will bring results.

There is also the educational and social advantage of meeting together to discuss those everyday problems common to us all, and making friendships which mean so much to us personally and as a profession.

Lastly, there is also the necessity of a closer co-operation with the County Agricultural and Public Health Authorities. It is by uniting as an Association in our own district that we are able to obtain the prestige that belongs to our profession, and to press for those lost duties which rightly are ours. I should, at this point, like particularly to mention the name of Mr. J. R. Bond, Chief County Agricultural Adviser, who in a very quiet and unassuming way has shown much interest and sympathy in the work of our Association. I take this as a very good omen which I trust will be far reaching in its effects.

Our headquarters lie in one of the richest dairying and breeding districts in the country. In common with other districts, infectious diseases are rampant, and the loss and wastage must be tremendous. At present all is not well, but we probably live at the dawn of a more enlightened era. The field of work is colossal. May this Association and its members not be found wanting when the opportunities for service present themselves. (Applause.)

On the proposal of Mr. Steele-Bodger, seconded by Major Bagshaw, the President was heartily thanked for his address.

West of Scotland Division's Scheme for the Eradication of Bovine Tuberculosis.

A discussion on this scheme was opened by Mr. Steele-Bodger, who said that thanks were due to the West of Scotland Division for bringing forward the scheme, as it had called forth expressions of opinion. His opinion was that the time was ripe for some action to be taken, but he did not think that the Scheme could be applied in the district in which he served. The incidence of tuberculosis, he had found, was very high and 75 per cent. reactors was an average figure for herds he had tested. He did not think the conditions in the West of Scotland were similar to those with which he was familiar. Further, the conditions obtaining in U.S.A. were not comparable with those obtaining in this country.

The freer a herd was of the disease, the more susceptible it became, and any attempt to eradicate the disease in individual herds here and there would not be likely to succeed under the conditions prevailing in his district.

He thought vaccination was of some value, and that routine veterinary inspection, together with regular biological testing of milk, would do good. He also thought that the Tuberculosis Order, the Milk and Dairies Order, and the Milk (Special Designations) Order should be co-ordinated.

Mr. Deville said that the Scheme was a bold and a good one, but he did not think the time was ripe for its application. In his view the scheme would be very costly and great difficulty would be experienced in convincing the Government of the necessity of such a measure.

He thought some steps should be taken preparatory to the Scheme and suggested that old reacting animals should be removed and an endeavour made to rear healthy young stock.

Mr. Furness agreed that the scheme would not be practicable under the conditions prevailing in that area, although it might be so in the West of Scotland. He did not think that eradication on individual farms would do any good, as re-infection was very likely to take place.

He thought that eradication ought to be proceeded with by a very gradual process, or tackled in a thorough manner.

Mr. Levie considered that the Scheme was not practicable and that efforts should be concentrated on eliminating reactors among animals supplying milk to the public. He felt certain that the West of Scotland Division must realise that the position was a serious one in their area, otherwise the scheme would not have been brought forward.

Major Bagshaw thought that great difficulty would be experienced in finding cattle to replace reactors. He did not think the scheme was practicable, and considered that the efficient administration of the Tuberculosis Order and the Milk and Dairies Order was capable of doing a lot of good.

Mr. Cockburn said that, with reference to vaccination, he had tested several vaccinated animals and had not found a reactor. He thought some encouragement should be given to farmers to raise healthy stock, and suggested that the Government should provide for testing and pay £1 for each animal passing the test.

The Hon. Secretary considered it eminently desirable that the disease should be eradicated, but it was very essential that any scheme devised should be reasonably sure of success. Before he would be prepared to support the scheme under discussion, or any other similar scheme, he would like to have definite answers to certain questions, namely:—What was the incidence of the disease? Was the incidence on the increase or decrease? Did efficient ventilation play any part in reducing the incidence? Did vaccination give any protection? Did the application of modern knowledge of dietetics reduce the losses from the disease?

He considered that if there were grounds for believing that the incidence could be decreased by any means other than wholesale slaughter, these means should first be investigated. Slaughter of reactors meant the destruction of many useful animals.

Mr. McArthur said the West of Scotland Division were really trying to get the feeling of the profession on the matter, and would be quite prepared to accept any modification that might be put forward. He drew attention to the work that is to be undertaken by the Hannah Institute.

The President then called for a resolution, and the following was proposed by Major Bagshaw, seconded by Mr. Wilkinson and adopted unanimously, as expressing the feeling of the meeting:—

Resolution.—"We sympathise with any measures put forward to eradicate Tuberculosis, and are ready to help in any practicable scheme. On due consideration, the feeling of this meeting is, that the West of Scotland Scheme is not applicable to this district, but we are of opinion that the rigid enforcement of the Milk and Dairies Order, together with tightening up of the Tuberculosis Order, would prepare the ground for more sweeping measures."

On the invitation of the President the members present, together with their ladies, were entertained to tea.

A vote of thanks to the President, Capt. Gunning, concluded the proceedings.

William J. Ironside, *Hon. Secretary.*

From The Veterinarian,

January, 1830.

Inflammation of the Udder in a Cow Treated with Iodine; also, a Case of Neurotomy.

By Mr. H. Christian, Canterbury.

To the Editors of the Veterinarian.

December 2, 1829.

Gentlemen,—Should you consider the two following cases worthy of your insertion in your very valuable periodical, you are welcome to make what use of them you may deem fit: and I also take this opportunity of wishing *hearty* success to your work; for it certainly is, *without exception*, one of the most valuable sources of information to the veterinarian that has ever issued from the press. I am, Gentlemen, your's, &c.

Henry Christian, v.s.

In the middle of the last month I was called to see a cow, the property of a farmer in the neighbourhood of Canterbury. The symptoms were as follows:—quick pulse, and indurated udder and speens. It had been in this state for four months, and several remedies had been tried before I saw her. I ordered fomentations, bleeding, and purging; but they were of no service. From two of the speens blood occasionally flowed, when attempting to milk her. At the end of a week I altered my treatment, and applied camphorated mercurial ointment. This, also, was of no benefit, and the udder and speens still continued in the same state as when I first saw her. Finding the foregoing remedies useless, I was determined to try the iodine; the proportions were ʒij of iodine to adeps ʒiij; at the end of a week the udder was smaller and softer than it had been for some time. I persevered in the treatment, rubbing in a drachm of the ointment twice a day, and at the end of a fortnight the udder and speens were *as well as if they had never been affected.*

The next case is to illustrate the utility of an operation, which has been so unfavourably spoken of by those who are not aware of its utility:—I refer to Neurotomy. This was a gelding, the property of a gentleman well known in this part of the country as a huntsman. About two years since the horse fell suddenly lame of his near fore foot, for which he was bled, poulticed, physicked, and turned out with one of Mr. Coleman's patent frog-shoes. At the end of three months that foot measured three-fourths of an inch broader than before, and he was to every appearance sound. But on his first going out he again became lame, and the gentleman determined to have him unnerved. It was performed early in the spring, and about one inch of the nerve excised. He got up, and went free from lameness. He was hunted all that season and some portion of this, until by an accident he fractured one of the lumbar vertebræ, and was obliged to be destroyed on the spot. After death I had the pleasure of examining his foot, which put on the following appearances:—The anterior ligament, uniting the navicular with the coffin bone, was partly ossified, as was also that one which joined it to the flexor tendon. The navicular bone itself was carious in two parts, and the peridesmium and pericondrium were united, and the joint almost destitute of synovia. Such were the appearances on dissection; before the operation, the horse was so lame as to be *entirely* useless; but after that operation, he was as good as any in the field. Such is the state of the case, and very plainly sets forth the utility of an operation which will hand down to posterity the name of the gentleman (Mr. Sewell) who revived, if not discovered, this very valuable mode of alleviating suffering.

Veterinary Inspection in Wiltshire.

At the last meeting of the Wilts Agricultural Committee, the Diseases of Animals Sub-Committee brought forward a resolution that they were not in favour of the appointment of two whole-time veterinary surgeons, but they would be prepared to consider favourably a scheme for the appointment of one whole-time veterinary officer to undertake the work under the Milk and Dairies (Consolidation) Act, 1915, and the Milk and Dairies Order, 1926, and to supervise and co-ordinate the work under the Tuberculosis Order of 1925.

Mr. Combes, chairman of the Sub-Committee, said there were two branches of veterinary work in the county, one more particularly under the direction of Dr. Tangye, the county medical officer of health, affecting the Milk and Dairies Orders, and the other concerning the Diseases of Animals Acts, which came under the purview of the Sub-Committee. One could not over appreciate the work that had been done by Dr. Tangye and his department regarding the question of milk, and it would be impossible to lay too much stress on the importance of this particular branch of the work, affecting one of the principal industries of the county—milk production. It was up to every milk producer to give Dr. Tangye every assistance he possibly could in his difficult task. The difficulty of the work could be imagined when he said that if any milk coming from Wilts was found in London to contain tubercle bacilli it was Dr. Tangye's delightful task to find out which cow gave that milk. Such a case had occurred in a large consignment of milk gathered from three counties, and possibly 30 or 40 farms, and Dr. Tangye's job was to find out where the cow was that gave the tuberculous milk. This was new work, and Dr. Tangye had succeeded most admirably in evolving order out of chaos, but the question had arisen in several cases as to whether it would not be desirable to have whole-time veterinary assistants to administer these Milk and Dairies Acts and Orders in the county. Although at first glance it might appear advantageous to have a staff and full control, still, in view of the difficulties which arose, geographical and otherwise, the Diseases of Animals Sub-Committee was not at the moment convinced that it would be an advantage to the administration of the Acts and Orders, or to the personnel of the staff, to have whole-time veterinary officers for the whole of the work, but that it would obviously be of assistance to have a full-time man to carry out the Milk and Dairies portion, and to assist the Diseases of Animals Committee in co-ordinating the work under the Tuberculosis Order. Therefore, they had passed this resolution that they would be prepared to consider favourably the appointment of such an officer.

The resolution was passed without further discussion, and will now be considered by the Joint Milk Committee.

. . . . . .

At a later stage in the proceedings, Mr. Combes said that the number of animals found to be affected with tuberculosis and slaughtered in 1926 was 654; in 1927, 754; in 1928, 572; and in 1929 the number was estimated to be 576, but the actual figures for the last three months of the year were not yet to hand. Although it was perhaps rather optimistic to anticipate that they would be able completely to eradicate "reactors," one could only hope that eventually they would be able to get their herds absolutely clean. There would then be a reasonable hope of maintaining them so, and they would notice that in the last year they had many less cases than in 1927.

The Chairman emphasised the importance of effort being made to eradicate tuberculosis from herds. It was not proposed to interfere with the present work of the local veterinary officers, who would still be employed, but the work under the Tuberculosis Order would be co-ordinated under the proposed whole-time officer. Those who had had County Council experience would know that to carry on any work of this kind by the payment of fees was most expensive, and he felt there would be a great deal more work done by a whole-time officer than by the payment of fees.

Macqueen Testimonial Fund.

Third List of Subscribers.

	£	s.	d.
Amount already acknowledged	343	17	0
F. W. Cundell, Esq.	5	5	0
J. B. Walker, Esq....	5	5	0
Messrs. Wright and Macdonald	5	5	0
Hugh Cooper, Esq.	5	5	0
C. Peirce, Esq.	5	5	0
H. E. Keylock, Esq.	5	5	0
North Wales Division of N.V.A.	5	0	0
David Imrie, Esq.	5	0	0
Major J. W. O'Kelly	5	0	0
John A. Craft, Esq.	3	3	0
Lt.-Col. P. J. Simpson	2	2	0
M. T. Sadler, Esq.	2	2	0
F. Ware, Esq.	2	2	0
Lt.-Col. T. E. Burridge	2	2	0
Lt.-Col. W. E. Schofield	2	2	0
Major A. N. Foster	2	2	0
A. Cornish-Bowden, Esq.	2	2	0
Major-General W. S. Anthony	2	2	0
Lt.-Col. E. Middleton Perry	2	2	0
Major R. C. Tennant	2	2	0
Messrs. Dier and Marks	2	2	0
F. T. Trewin, Esq.	2	2	0
Professor A. S. Macqueen...	2	2	0
W. J. Carless, Esq.	2	2	0
Messrs. E. C. and L. W. Bovett	2	2	0
D. G. Davies, Esq.	2	2	0
F. T. Harvey, Esq.	2	2	0
James Martin, Esq.	2	0	0
T. D. Martin, Esq....	2	0	0
Major J. Smith	1	1	0
V. Pride-Jones, Esq.	1	1	0
John Cane, Esq.	1	1	0
Major F. C. Gavin...	1	1	0
Major W. A. Macgregor	1	1	0
T. Walker, Esq.	1	1	0
E. Lionel Stroud, Esq.	1	1	0
Lt.-Col. W. H. Walker	1	1	0
H. Sumner, Esq.	1	1	0
Hugh Begg, Esq.	1	1	0
Edward R. Edwards, Esq.	1	1	0
Cyril Golledge, Esq.	1	1	0
A. Millar, Esq.	1	1	0
J. Adamson, Esq.	1	1	0
H. J. Parkin, Esq.	1	1	0
E. McSwiney, Esq.	1	1	0
Sydney Villar, Esq.	1	1	0
James Chalmers, Esq.	1	1	0
A. A. Forsyth, Esq.	1	1	0
W. A. Hancock, Esq.	1	1	0
J. S. Watt, Esq.	1	1	0
A. H. Andrew, Esq.	1	1	0
Major Brenan De Vine	1	1	0
Major C. Davenport	1	1	0
W. H. Priston, Esq.	1	1	0
T. J. Brain, Esq.	1	1	0
Major F. E. Heath	1	1	0
A. Case, Esq.	1	1	0
Martin Sparrow, Esq.	1	1	0
H. E. Hornby, Esq.	1	1	0
Sampson Bennett, Esq.	1	1	0
W. E. Ison, Esq.	1	1	0
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Major G. F. Steevenson	1	0	0
Major G. Williamson	1	0	0
F. W. Goodall, Esq.	1	0	0
J. H. Jerrom, Esq.	1	0	0
W. Peirson, Esq.	1	0	0
E. F. Wood, Esq.		10	6
E. V. Kelly, Esq.		10	6
A. B. Forsyth, Esq.		10	6
Henry Taylor, Esq.		10	6
H. E. T. Mason, Esq.		10	6
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D. Eric Wilkinson, Esq.		10	6
Esmond Brown, Esq.		10	6
R. Bryden, Esq.		10	0
T. W. Carnachan, Esq.		10	0
Anonymous		10	0
C. C. Parsons, Esq.		10	0
Major T. H. Hankin		10	0
Major T. M. Tate		5	0
	£479	15	0

Will intending subscribers please note that the Fund closes on March 31st, 1930.

H. J. Dawes,
Hon. Treasurer.

Camden House,
High Street,
West Bromwich,
February 8th, 1930.

Notes and News.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

Feb. 17th—Meetings of the Finance Committee, N.V.M.A., 3 p.m.; Editorial Committee, N.V.M.A., 4.30 p.m., at 10 Grays Inn Square, W.C.1.

Feb. 22nd—Meeting of the North Midland Division, N.V.M.A., at Sheffield.

Mar. 7th—Annual Dinner of the Lancashire Division, N.V.M.A., at Liverpool.

R.C.V.S. Obituary.

McAleer, Joseph, Church Street, Portadown, Co. Armagh. Graduated, Edin., May 28th, 1889, died January 29th, 1930. Age 66 years.

Personal.

Marriage.—Priston—Westoll.—At Agra, India, U.P., on January 18th, Captain William Henry Priston, Indian Veterinary Service, second son of S. J. Priston, of Raventor, Lydford, Devon, to Dorothy, younger daughter of the late James Westoll and Mrs. Westoll, of Coniscliffe, Darlington, and 88, Knightsbridge, London, S.W.1.

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Appointment.—The following occurs amongst the appointments made by the Secretary of State for the Colonies during the month of January, 1930:—Capt. J. P. A. Morris, J.P., Veterinary Officer, Northern Rhodesia, to be Deputy Chief Veterinary Officer, Northern Rhodesia.

Foot-and-Mouth Disease.

During the year 1929, 38 outbreaks were confirmed in Great Britain. This is the lowest number of outbreaks in any year since 1918, and compares with 138 outbreaks in 1928, 141 in 1927, and 204 in 1926.

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.
All correspondence must bear the name and address of the contributor for publication.
The Editor does not hold himself responsible for the opinions of his correspondents.

Milk—Special Designations.

To the Editor of the Veterinary Record.

Sir,—The discussion on the above subject at the last Quarterly meeting of the Council of the N.V.M.A. (page 84 of the *Veterinary Record* of the 25th ult.) is very interesting.

All will agree that *future designations* should be as simple as possible, and I think the following cannot be beaten :—

"Licensed Milk from Tuberculin-tested Cows."
"Licensed Clean Milk."
"Licensed Pasteurised Milk."

Personally, I cannot see any objection to the word "Clean" in the second class. This milk will be licensed on its low bacterial content, and produced by cows that are periodically examined for clinical signs of tuberculosis and other diseases.

The above designations should deceive no one.

Yours faithfully,
J. H. Wynne.

Vaynol,
Denbigh.
January 27th, 1930.

The Zoological Institute of the Vienna University report that the examination of snails under U.V. rays is giving remarkable results. Various species of snails have shown quite different colours under the rays, and it is expected that further experiments will help greatly toward scientific differentiation of the hitherto little known animal pigments.

A Royal Retort.

To the Editor of The Veterinary Record.

Sir,—I have just read Dr. Hare's letter "The Veterinary Surgeon in Fiction."

It encourages me, delightful as it is, to write a note on "The Veterinary Surgeon in Truth."

I "shivered in my timbers" when I read a recent "Life of King Edward."

When His Majesty, it is said, paid his first visit to Paris as a King, he met with a procession of revolutionists at the Gare de Nord. As soon as they saw who was in the carriage with the President, a line was made clear, amidst cheers.

The President then said "If Your Majesty had not ben a King, what a wonderful President you would have made!"

King Edward: "Have you ever heard of a doctor who wanted to be a veterinary surgeon?"

Neat, but harsh.

The words are as near as I can remember them; I lent my copy of the book to a pal and that, in India, means, "not lost, but gone before."

Yours sincerely,
R. F. Stirling.

Nagpur, C.P.,
India.
11*th January*, 1930.

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The Editor acknowledges the receipt of the following :—
Communications from Mr. J. R. Baxter (Lechlade), Mr. A. Davidson (Dumfries), Major D. Hogg (Woolwich), Professor R. G. Linton (Edinburgh), Messrs. J. D. Pottie (Greenock), G. A. Sangster (Dumfries), W. Scott (Bridgwater) and G. S. Walker (Farnham).

Diseases of Animals Acts, 1894 to 1927.

SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy).§†		Parasitic Mange.§		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks confirmed.	Animals attacked.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 16 to 31 Jan., 1930 ...	23	26	—	—	—	—	21	36	67•	114	66
Corresponding period in—											
1929 ...	28	36	8	896	—	—	26	43	67	50	11
1928 ...	28	33	18	1,879	—	—	24	43	74	85	43
1927 ...	24	30	7	437	—	—	33	52	76	44	20
Total 1 to 31 Jan., 1930 ...	43	47	—	—	—	—	42	63	133	205	96
Corresponding period in—											
1929 ...	48	58	8	896	—	—	42	77	158	96	26
1928 ...	50	57	53	4,420	—	—	58	100	139	144	74
1927 ...	46	72	12	1,002	—	—	59	107	147	83	32

Note.—The figures for the current year are approximate only.

• Includes 8 outbreaks confirmed in 1929 but not notified to Ministry until 1930.

† Including outbreaks in recently imported animals.

§ Excluding outbreaks in Army Horses.